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PANCREATIC CALCULI*

BY L. B. MORRISON, M.D.,† AND I. K. BOGAN, M.D.†

A DIAGNOSIS of pancreatic lithiasis appears to be made rarely during life, yet in the past year we have seen four cases which we feel reasonably certain come under this category. We have no proof that the shadows interpreted as stones are not due to calcification of the pancreatic tissues since none of the patients have been operated upon, or come to autopsy.

The autopsy findings in cases reported by previous workers lead one to believe that these are true calculi. Opie[1] reported several cases in which calculi were found within the ducts at autopsy. In a recent review Hess[2] reports proven cases diagnosed during life, among them one of his own.

The first case in our series is a twenty-three year old diabetic girl, who, last September, entered the New England Deaconess Hospital under Dr. E. P. Joslin's service, complaining of pain in her legs. The pain was of such severity that it prevented her from sleeping at night. The patient had had diabetes for five years and had originally gone to a physician because of severe upper abdominal pain. She had not been upon a strict diet, although she was given a diet in 1923. She received no insulin until two months before her entry into the hospital, at which time she took approximately forty units a day. Upon her entrance she weighed seventy-four pounds, a loss of fifty pounds since 1923, when her glycosuria was first discovered. Her urinary sugar was 4.2 per cent. and fasting blood sugar .26. An attempt to do a pancreatic functional test resulted in failure to pass the tube through the pylorus.

The patient had three to five stools daily, which contained an excess of fat. Upon physical examination there was dullness over the upper left chest, but no râles. A roentgenogram showed a few minute calcium deposits, but no definite evidence of tuberculosis, unless one considers that all calcium deposits are evidence of tuberculosis.

During a routine roentgenologic examination an elongated mass of irregular shadows occupying the usual position of the pancreas was seen. From the arrangement and contour of these shadows one would say they filled the lumina of the ducts and acini of the pancreas. A diagnosis of multiple pancreatic calculi was made. (Figures 2 and 3.)

In addition to the pancreatic calculi this patient has moderate calcification of the vessels of her legs. (Figure 4.) Under treatment in the hospital, the pain in her legs gradually subsided. She was last seen in May 1928, at which time she had gained sixteen pounds and had returned to her occupation—school teaching. Films taken at this time showed no change in the vessels of the legs, or in the pancreatic shadows.

Shortly after finding this calcified pancreas a second patient, an elderly woman, was seen with shadows in the region of the pancreas. These shadows were less extensive, less dense and less sharply defined than those in the first case seen. They did not resemble calcified vessels, nor was the arrangement of the calcium like that seen in a large lymph node, or in a group of lymph nodes. (Figure 5.)

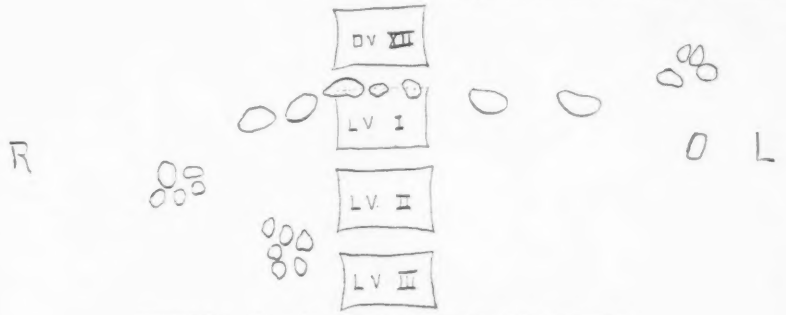


FIGURE 1. Lymph nodes in the region of the pancreas.

Within the past month two patients with provisional diagnoses of cholecystitis have been x-rayed. Both of these patients had severe high abdominal pain, right and left sided, which radiated to the back. The first showed several small shadows just at the right of the spine, which resembled gall stones. The gall bladder, however, filled and emptied normally with the oral dye and the shadows were seen between the gall bladder and the spine. (Figure 6.) In the second patient, shadows were demonstrated in the region of the head, body and tail of the pancreas. (Figure 7.)

In a re-examination of the roentgenograms of 6000 consecutive cases we have found four other patients with shadows in the pancreatic region

*From the Clinic of the New England Deaconess Hospital, Boston.

†For record and address of author see "This Week's Issue," page 1174.

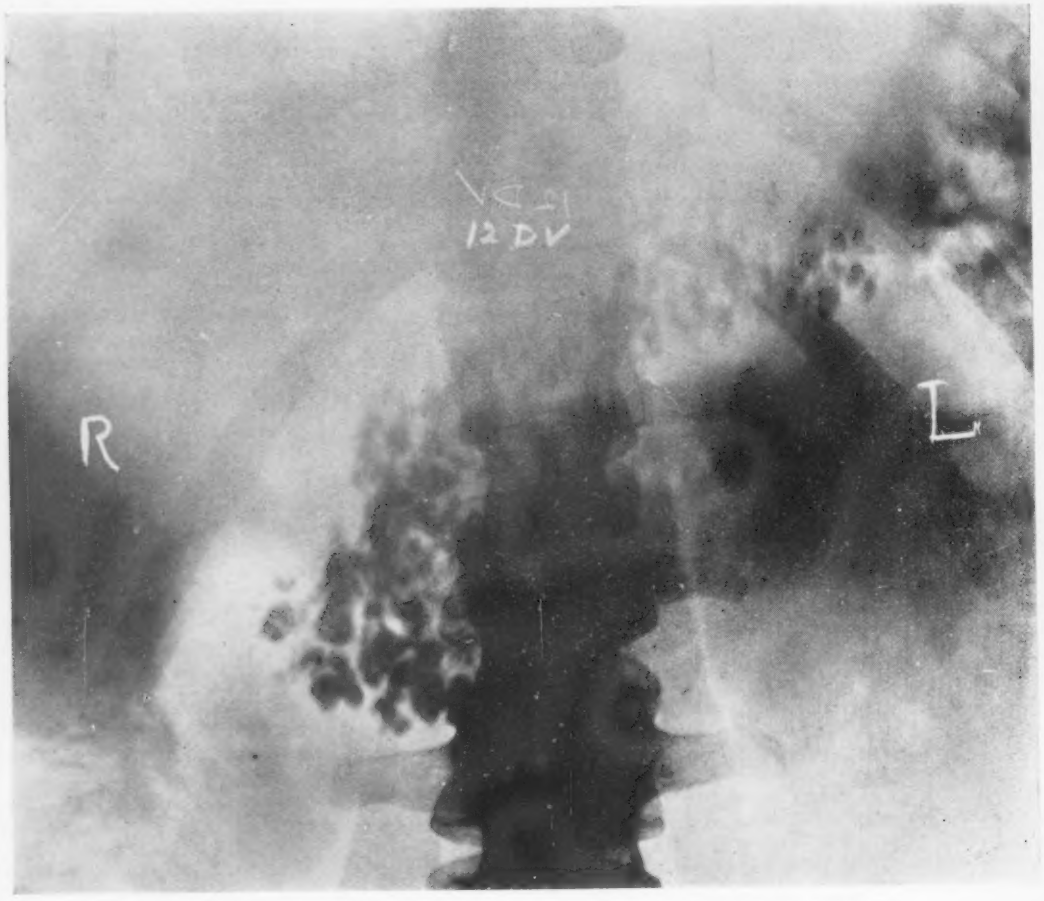


FIGURE 2. A twenty-three year old diabetic with numerous pancreatic calculi.

FIGURE 3. Same patient as Figure 2. Lateral view.

FIGURE 4. Same patient as Figures 2 and 3. Calcification of the vessels of the legs.

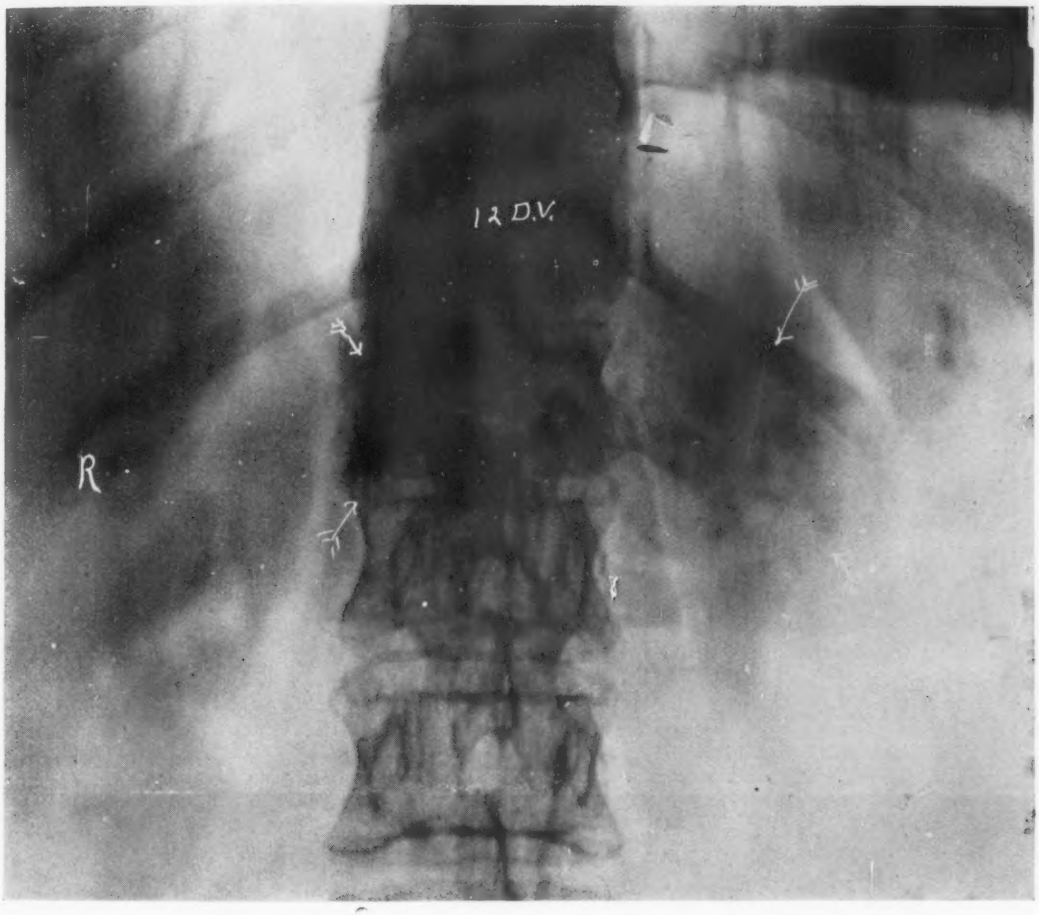


FIGURE 5. A woman of sixty-nine years with definite shadows in her pancreatic region. No symptoms.

FIGURE 6. Provisional diagnosis cholelithiasis. Note shadows between cholecystogram and second lumbar vertebra.

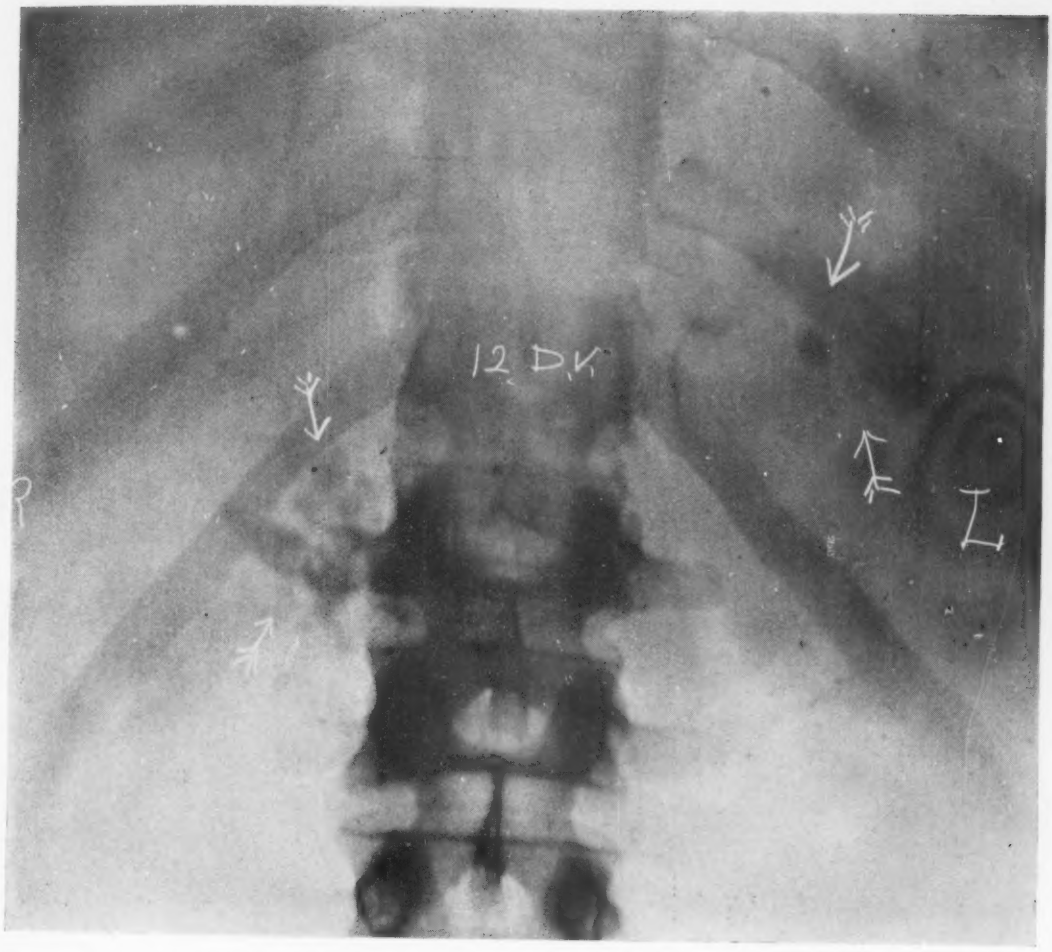


FIGURE 7. Provisional diagnosis cholelithiasis. Note clumps of shadows in the region of the head and tail of the pancreas.

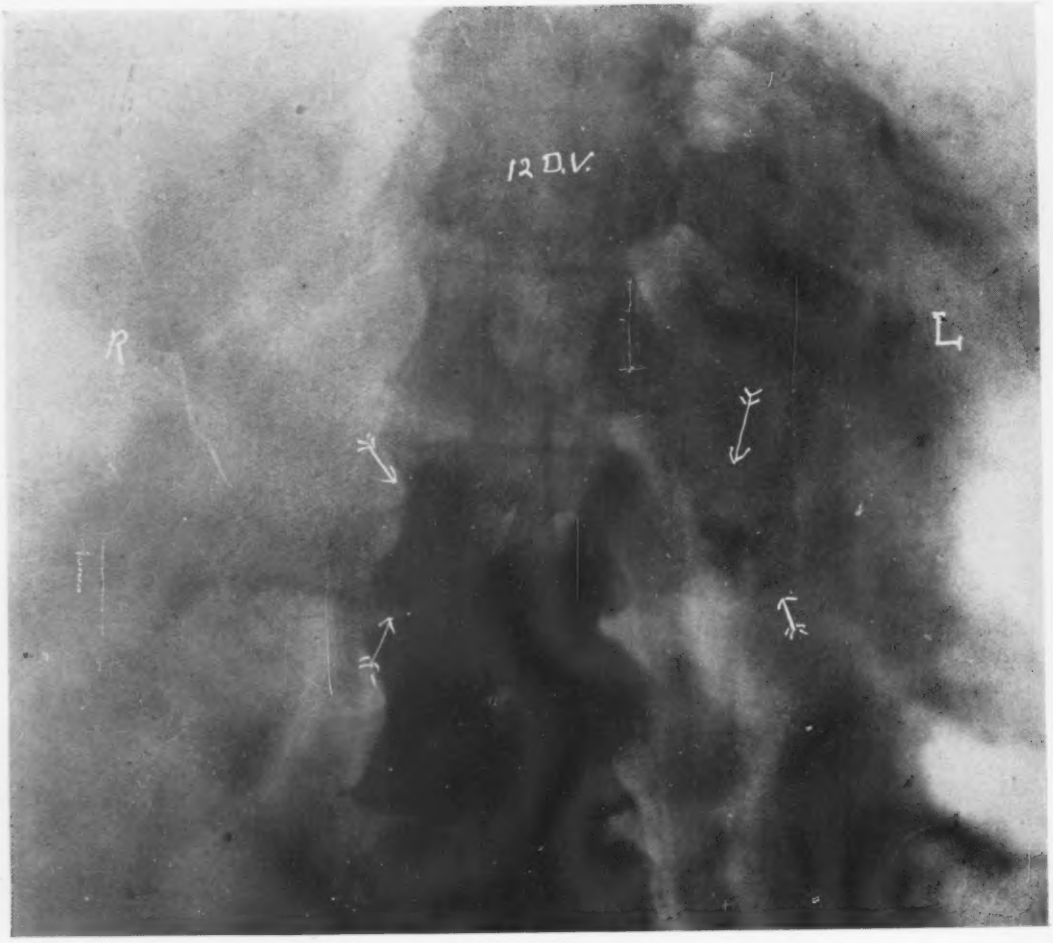


FIGURE 8. A diabetic of sixty-nine years. No symptoms.

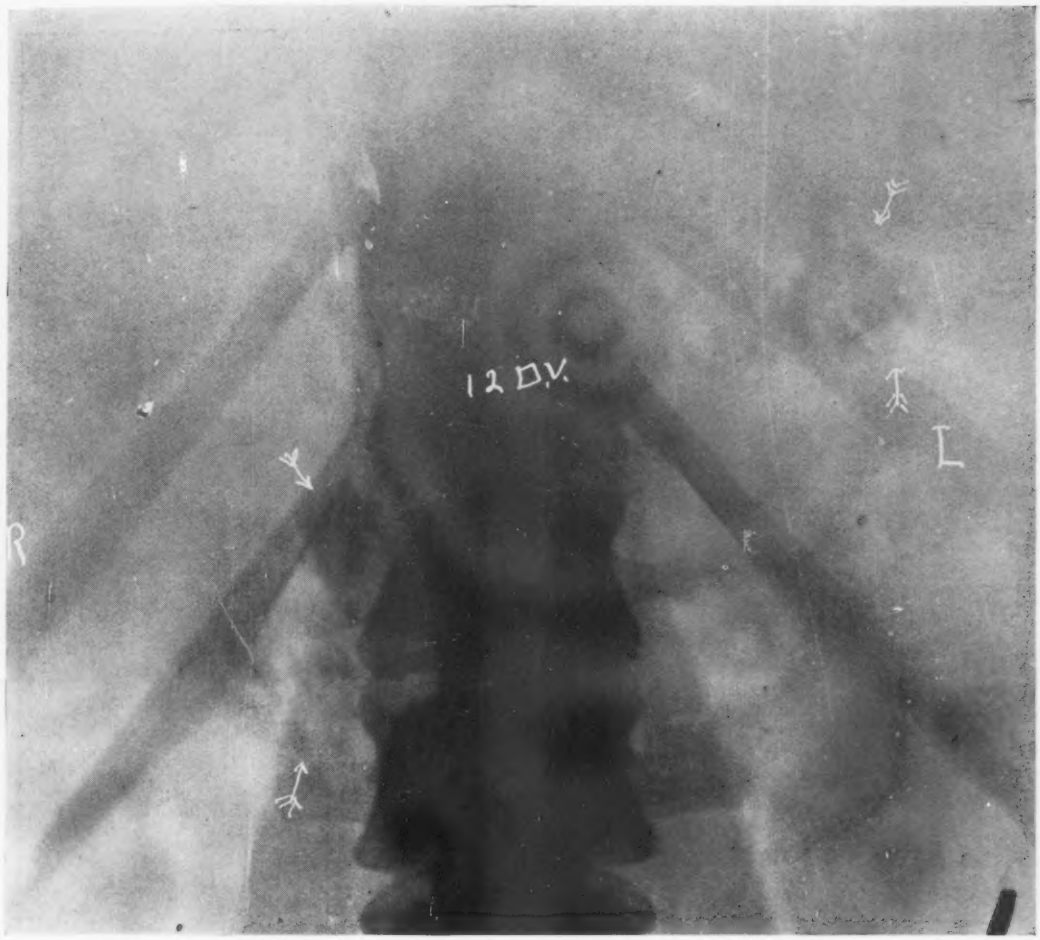


FIGURE 9. A diabetic of thirty-one years. Attacks of upper abdominal pain for eleven years.

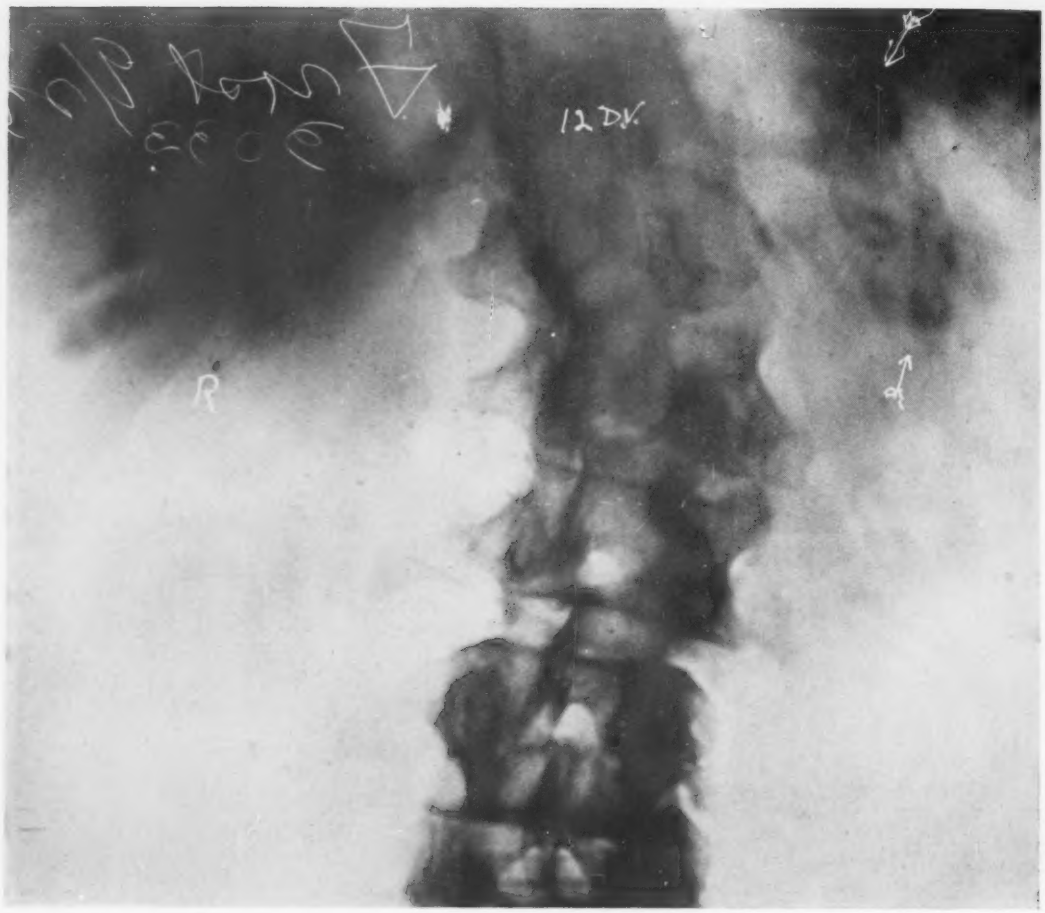


FIGURE 10. Provisional diagnosis cholelithiasis.

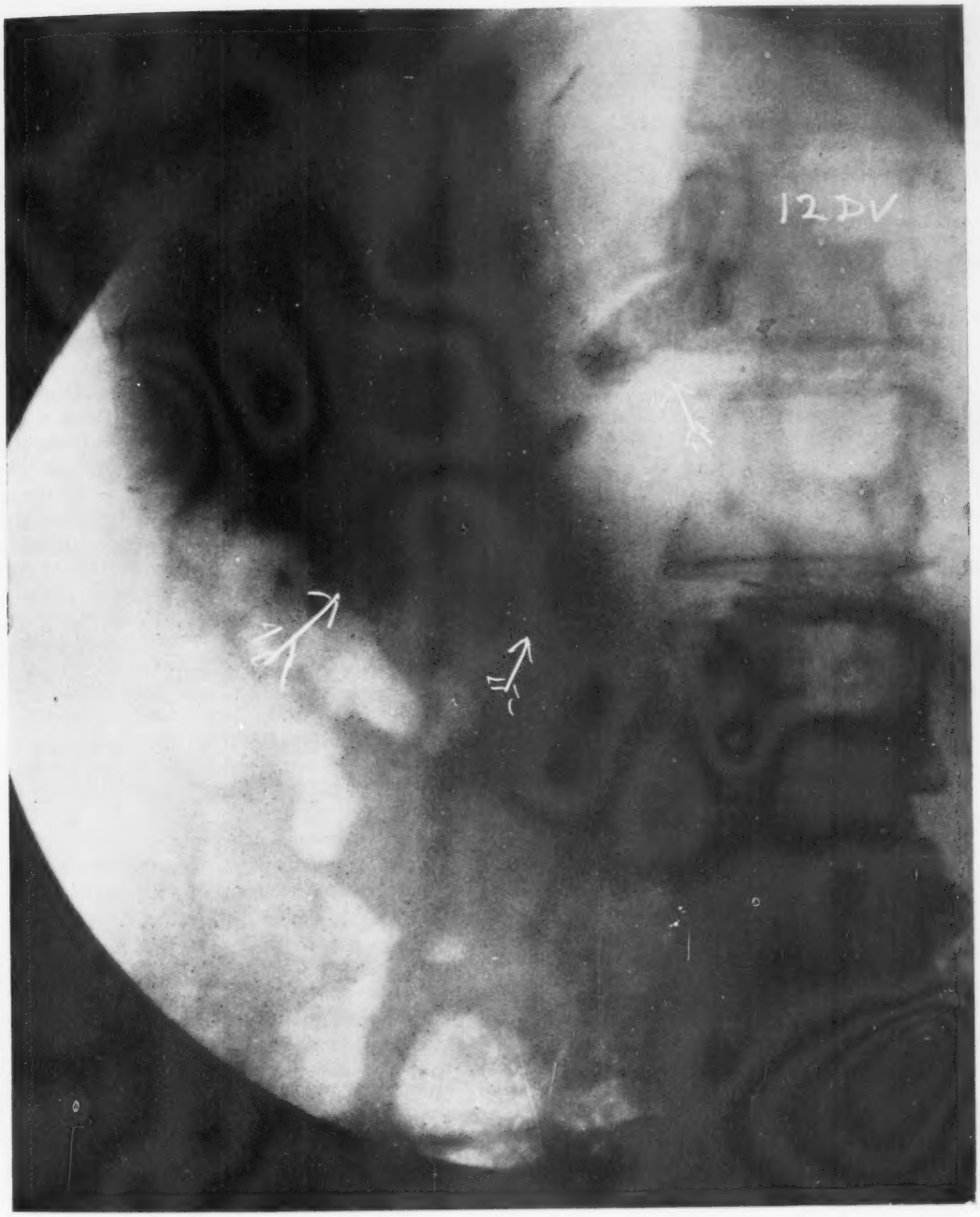


FIGURE 11. A diabetic of forty-six years. No symptoms.

which we now believe are pancreatic stones. At the time these patients were x-rayed we thought we were dealing with atypically calcified lymph nodes. (Figure 1.) A gall bladder was ruled out in every case.

The first of this series was a woman of sixty-nine years who had had a cholecystectomy a few months previously. Later she developed diabetes. This patient did not complain of pain and her shadows were noted during a routine gastro-intestinal examination. (Figure 8.)

The second patient was seen in 1925 and at that time was thirty-one years old and a diabetic of four years' standing. Pain had been constant for the year preceding entry and he had had attacks of pain in the upper abdomen since 1914. The pain was of great severity and relieved only by morphia. There was residual tenderness on the left. The gall bladder was examined by roentgen ray and thought to be negative. A note was made on the history that the shadows and pain might be accounted for by tabes mesentericus. (Figure 9.)

The third patient, a woman of sixty-seven years, had a gall bladder history and a clinical diagnosis of cholelithiasis. She entered the hospital before the advent of cholecystography, but no suggestive shadows were seen in the gall bladder region. (Figure 10.)

The fourth patient, a woman of forty-six years, had had diabetes for eleven years. At the present time her diabetes is quiescent. The patient had never had symptoms referable to the upper abdomen. She had had diarrhoea for some time. The roentgen findings in this patient are particularly interesting and unusual. (Figure 11.)

SUMMARY

A diagnosis of pancreatic lithiasis has been made roentgenologically in eight cases. The ages of these patients vary from twenty-three to sixty-nine years. Five are female and three male. Four or fifty per cent. are diabetics. Is there any relationship? Four had severe upper abdominal pain radiating to the back. Stool reports were accessible in only one case, in which fatty stools were noted.

COMMENT

The fact that we have diagnosed roentgenologically pancreatic lithiasis four times within the past year leads us to believe this disease is often overlooked. Our cases were not remarked until we had the striking one in September 1927. Probably one reason for the failure to make this diagnosis is that the patients with symptoms are sent to the roentgenologist with the provisional diagnosis of cholelithiasis and a request for examination of the gall bladder. The roentgenologist naturally confines himself to the gall bladder region, which includes only the head of the pancreas. If shadows are seen outside the gall bladder, the natural conclusion is that they are atypical lymph nodes. If a film of the upper abdomen were taken, shadows in the region of the tail of the pancreas would be seen and make possible a correct diagnosis.

REFERENCES

1 Opie, E. L.: Disease of the Pancreas, J. B. Lippincott Co., Philadelphia and London, 1910, p. 261.

2 Hess, G. H.: Pancreatic Lithiasis, Radiology, 1928, IV, 342.

ADENOMA OF THE ADRENAL CORTEX

(With Report of a Case*)

BY JAMES B. HICKS, M.D.†

ADENOMA of the adrenal cortex is an epithelial tumor growth, benign in character, with glandlike structures, the cells of which are very similar or identical with those of the adrenal cortex in which it arises. The growths vary in size from nodules weighing a few milligrams to masses of very large dimensions weighing as much as two or three thousand grams.

The condition is quite rare. T. E. Gibson, who has made a very thorough study of tumors of the adrenal, thinks they occur only about once in ten or twelve thousand patients admitted to a general hospital. By far most of the growths never produce clinical symptoms and are found in routine autopsies. There is, however, a considerable number that do produce clinical symptoms. Urologists probably see more cases than any other branch of clinicians because, pre-operatively and even at operation, the tumor may be mistaken for the Grawitz's tumor (hypernephroma). It is extremely important to be able to distinguish between these two tumors, as the adenoma is benign and the hypernephroma one of the most malignant of neoplasms.

One of the most interesting symptoms associated with the disease is that of virilism. In connection with adenoma of the adrenal, virilism evidences itself by the fact that in females the female primary and secondary sexual characteristics are diminished, while the male are increased. Cases have been described at all ages, from 14 months to the fifth and sixth decades of life. Pathologically, adenomas of the adrenal cortex are found in both men and women. Clinically, however, all the proven cases are in children or women. Only doubtful cases occur in the adult male.

Recently such a case of adenoma of the adrenal cortex was seen in the Clinic. The purpose of this article is to give a brief résumé of the main features of this very interesting condition and to report this case.

HISTORICAL

The clinical picture of virilism has been recognized since ancient times. Hippocrates described

*From the Department of Urology, The Lahey Clinic, Boston.

†For record and address of author see "This Week's Issue," page 1174.

two married women "with virilism, bodies resembling the male and with hair." (Similar cases have been observed and reported by various authors.) Wm. Cooke (1756) reported a case of virilism with a suprarenal tumor in a seven year old girl. In 1905 Bullock and Sequeira pointed out that the tumor develops in the suprarenal cortex. (They could not find any thymus in the cases in the children they reported.) In 1909 Bortz reported a number of cases in adults. In 1910 Apert reported 35 cases each with autopsy (none observed by himself). He showed that different descriptions represent different types of the same disease. He, therefore, classified patients according to age and appearance of the disease. In 1914 Gallais reported 51 cases in women and children and one doubtful case in a man. More recent articles are by A. Collet, Gordon Holmes, L. W. Smith and Jos. Merriam, and T. E. Gibson.

Collet reported, presumably, the first case of the supra-renal genital syndrome in a child who survived the operation for removal of the tumor. Five other cases in children with ages from 14 months to 14 years have been reported with operation, all of whom died soon after operation. Collet's case, a 23 months old female, pseudohermaphrodite of healthy, over-plump aspect, heavy hair growth on genital organs, and a deep voice, recovered from the operation, in which a small supra-renal tumor, adenomatous in type, was removed. Two years after the operation the hair had almost gone; the voice was still low; the child was nervous and sometimes depressed, but was otherwise lively and intelligent.

Holmes reported a case of a young woman whom he observed for nine years. The patient developed normally up to the age of 17 years. When she came under his observation, she was found to show loss of erotic feelings, lack of modesty, cessation of the menses for nine years, hirsutism, atrophy of the mammae, atrophy of the uterus, change in the distribution of fat, and overgrowth of the clitoris. After removal of the tumor, she reverted to normal femininity in a short time.

L. W. Smith and Joseph Merriam during the last year reported a case in which the tumor before operation was thought to be an ovarian cyst with a long pedicle. There were no signs of virilism. At operation the nature of the mass was not definitely determined, but on microscopic examination it was found to be an adenoma of the adrenal. An excellent description of the histological picture is given in this article.

Gibson has made a thorough study of adrenal tumors, both medullary and cortical. He quotes several sets of statistics to show the rarity of the tumors and gives a description of the picture of virilism with illustrations.

PATHOLOGY

The tumor is practically always an adenoma of the cortex of the adrenal, although some cases of virilism with sarcomatous and carcinomatous changes are reported. H. R. Spencer, in reviewing 1190 routine autopsies at the Maryland General Hospital, found three instances of small adenoma. He says that Kelynack reported three in 1500 necropsies. He concluded that the growths are usually unilateral and solitary, but occasionally are bilateral and multiple. Adenomas usually are well circumscribed, but, as a rule, are not encapsulated. They differ in size from a few milligrams to exceptionally large masses. Microscopically they vary from an almost exact reproduction of cortical tissue to glandlike spaces or alveoli lined with cylindric or cuboidal cells. As adenomata, they do not commonly metastasize, but malignant transformations are probably a frequent occurrence.

There have been several theories advanced to explain the etiology of virilism. It is generally accepted that there is an internal secretion from the growth which, in women, tends to diminish the female and increase the male primary and secondary sexual characteristics. Krabbe has advanced the theory that the tumor arises from sex glands, masculine in type, which are early involved in the suprarenal cortex. That such may be the case seems probable, as embryologically the adrenal cortex, kidney, and testes develop from the same type of tissue and in close proximity. Bullock and Sequeira pointed out the possibility of such cells. Mechel noticed large suprarenal glands in guinea pigs in the rutting season. Kolmer has noted the relation of variation of suprarenal glands in guinea pigs with age, sex, and condition of genital organs.

SYMPTOMS

The most common symptoms in females are those of diminished primary and secondary sexual characteristics, with a change toward the male, i. e., growth of beard, hair over chest, extremities, and around pubis, resembling that in the adult male. There may also be a masculine appearance of the limbs, masculine facies, and sometimes a low-pitched voice. In females there is often observed a lack of modesty and lack of erotic feelings. There may be an atrophy of the mammae, atrophy of the uterus, a cessation of the menses, a change in the distribution of subcutaneous fat, and an enlarged clitoris, all to such an extent as to make up a picture of hermaphroditism. In boys there is a precocious and premature development of the external genital organs without potency. This usually evolves later and slowly. A rare symptom, but one that was present in our case, is pigmentation of the skin. The younger the patient, as a rule, the more pronounced are the symptoms.

It is extremely unusual to see an adrenal tumor in the male which produces secondary sexual characteristics of the feminine type. It may well be that the disease in men may cause

only mild symptoms and, therefore, be overlooked. Certainly, the tumors found in males at the autopsy table are very minute and it is difficult to conceive their being the cause of marked symptomatology.

DIAGNOSIS

The diagnosis is to be suspected when a careful study of the patient showing signs of virilism demonstrates a suprarenal mass either by physical examination, by cystoscopy and pyelogram, or by surgical exploration.

In young patients the symptoms are usually marked and their presence should cause the physician to look for an explanation by all the methods at his disposal. In older patients, the changes in the genitalia and the hirsutism may be of such a mild nature that it may be overlooked in a routine examination. They may be entirely absent. In our case, the only definite symptoms were a tumor mass and pigmentation of the skin. In a large percentage of cases the true diagnosis is made only after microscopical examination of the tumor tissue removed at operation or autopsy.

TREATMENT

From the results obtained in the few cases that have been fully reported, it is evident that surgical removal of the tumor is the best form of treatment, although various types of glandular therapy have been tried. We have found no reports of the use of x-ray or radium therapy in the literature. In our own case, three x-ray treatments had been given over the tumor before the patient came to the Clinic, without any appreciable effect.

Although there is a high operative mortality rate in young patients, the benefits of the complete surgical removal of the tumor are so great that attempts must be made to lower this rate by improved surgical technique, rather than to substitute other measures for surgery. The mortality rate decreases as the patient grows older, and is no higher in adults than in other major operations of similar severity. Certainly, the treatment of choice must be that which prevents the persistence of the symptoms of virilism or a malignant change in the tumor and returns the patient to a condition of normal health and growth.

CASE REPORT

S. J. W., white woman, single, 48. First seen July 16, 1927.

Complaint: Abdominal tumor.

F. H.: Negative.

P. H.: General health was always fair. Pneumonia 12 years ago, and an appendectomy 15 years ago.

Menstrual History: Menses were established at the age of 13½. Periods were always irregular, coming at three weeks to five and six months intervals. Flow was always profuse and periods lasted from one to two weeks. The last typical period was in March, 1926.

Genito-Urinary: The patient had pneumonia nine years ago and for a short while after recovery there was frequency of urination. About sixteen months ago she had "intestinal influenza" with marked frequency of urination lasting for some time afterward. For about one year she had noticed blood when she went to stool. This, she thought, was vaginal, as at those times there was no difficulty in urination. She voided four to five times during the day and had nocturia once a night. The past history, otherwise, was essentially negative.

P. I.: For six or seven years there has been an almost constant, dull, dragging pain in the L. U. Q. of the abdomen. About sixteen months ago, while in bed with an illness characterized by colicy pain, odorous stools, nausea and fever, a lump in the L. U. Q. was discovered. This has grown steadily in size. There are no other symptoms except some fulness in the epigastrium at times which is relieved by belching. The bowels are regular without cathartics.

She has been told by two physicians, that the mass is an enlarged spleen, and by another that it is a tumor of the kidney. Two months ago she had three x-ray treatments over the spleen, without benefit.

P. E.: T. 98.6°. Pulse 86. B/P. 158/100. Patient is a well-developed and nourished white woman, aged 48. There is a rather marked generalized brownish yellow pigmentation to the skin. There are a few sonorous râles throughout the chest. The heart and lungs are otherwise negative. The abdomen is rounded with a definite bulging in the left side. On palpation, occupying the left side of the abdomen and extending from underneath the ribs down to the crest of the ilium, there is a smooth, firm, painless mass with what is thought to be a notch in the median border. This does not move with respiration. The physical examination, including vaginal and rectal examinations, are otherwise essentially negative.

Impression: Splenomegaly.

Clinical Study: The urine was negative on repeated examinations except for an occasional hyaline cast. A complete blood study was done and found to be normal. The blood Wassermann was negative. Blood NPN was 39 mgms. per 100 c.c. The gastro-intestinal study was negative except that the stomach was slightly compressed by a mass which was thought to be outside the G. I. tract. A diagnosis was then made of splenomegaly. The patient next seen Sept. 17, 1927, at which time it was decided to do a cystoscopy and pyelogram, as there was some question about the bleeding noticed at stools being urinary in origin.

Cystoscopy: The bladder looked essentially normal except for slight hypertrophy of the interureteric ridge and slight reddening of the trigone. The right ureter was catheterized its full length with a No. 6 X-ray catheter without difficulty. On the left the same sized catheter could be introduced only about 20 cm. Dye tests and sediments from kidneys and bladder specimens were normal. A left pyelogram was made. X-rays showed the right kidney to be normal in size and position. The pyelogram of the left kidney showed the kidney to be displaced downward to the level of the pelvic brim. (Fig. 1.) The upper pole was not visualized. The upper calyx was compressed and much elongated. Above and apparently adjoining the kidney there was a shadow apparently from a dense mass extending up under the diaphragm.

From this data, a diagnosis of hypernephroma was made. Operation was advised and accepted.

X-rays of the chest, skull, and long bones were negative for evidence of metastasis.

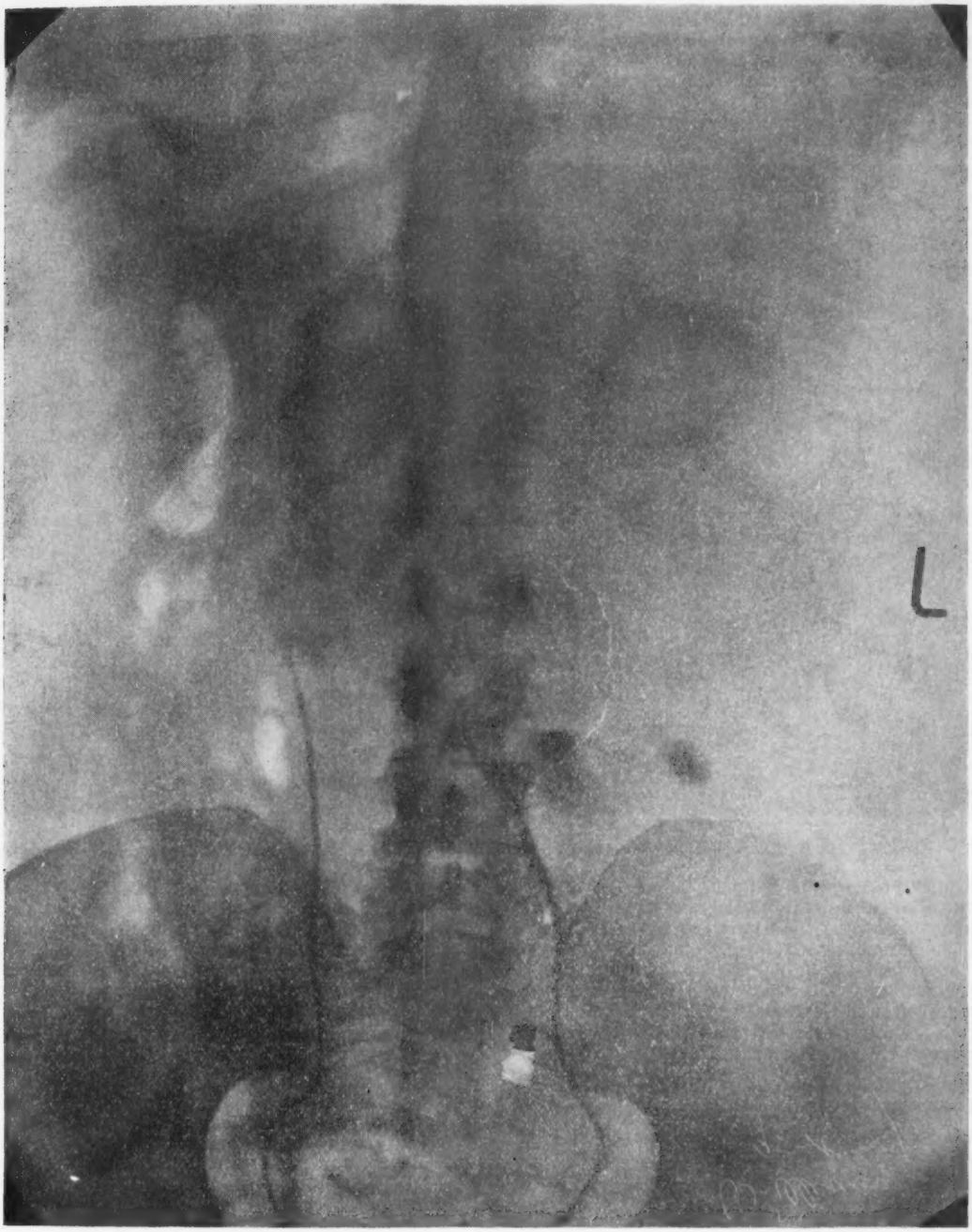


FIGURE 1.

Operation: (Dr. F. H. Lahey.)

Oct. 3, 1927.—Left rectus incision with transverse expansion into left flank. A retroperitoneal, irregularly lobulated, reddish brown tumor, about the size of a football, was seen. The tumor arose apparently from the upper pole of the kidney, pushing the kidney downward as seen in the pyelogram. It was adherent to the spleen. The ureter was normal and none of the vessels of the pedicle were involved. There were large engorged vessels over the surface of the tumor. The tumor was also adherent to the stomach and the splenic flexure of the colon. All adhesions were easily freed with very little bleeding. The kidney pedicle was clamped, cut and doubly ligated, after which the ureter was divided and tied. The tumor was then quite easily freed from the posterior abdominal wall. The slight ooze from the surface of the spleen was well controlled by a cigarette drain, which was drawn out through a stab wound in the loin. The defect in the peritoneum was closed over the drain. The incisions were then closed in layers.

Diagnosis: Left kidney tumor, apparently a hypernephroma.

Operation: Transperitoneal left nephrectomy; excision of hypernephroma. At the close of the operation, the patient was in extreme shock. The blood pressure was 50/40. A transfusion of 500 c.c. of citrated blood was given before moving the patient from the operating table.

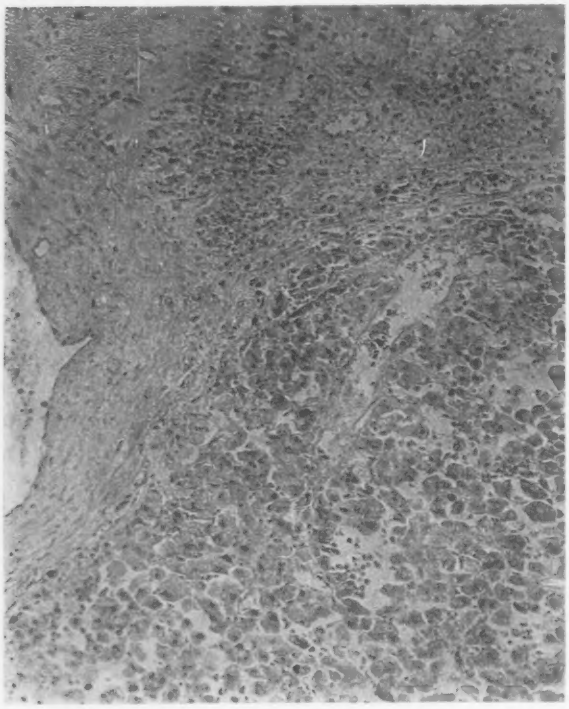
The pathological report by Dr. Lawrence W. Smith was as follows:

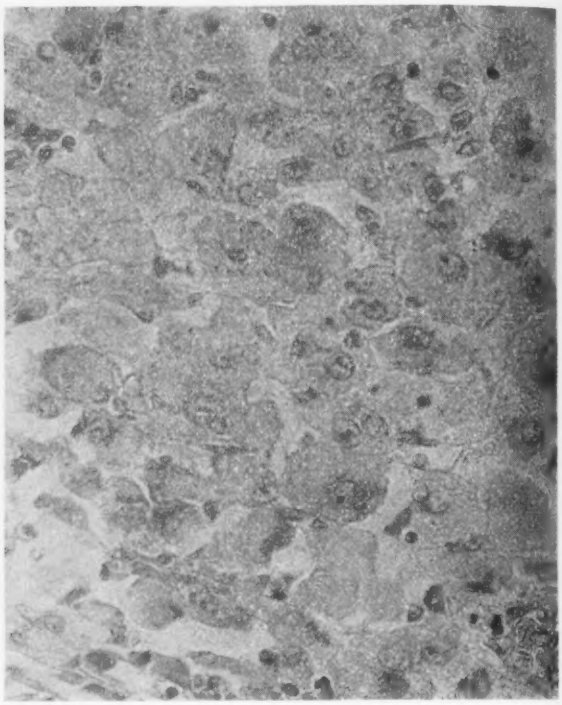
"Specimen submitted for examination consists of a large tumor mass to which is attached the kidney and a small portion of the ureter. The tumor, together with the kidney, weighs 2300 gms. The tumor is very well encapsulated. Running through the capsule are seen many large dilated blood vessels. On section many strands of dense connective tissue act as a supporting stroma for the tumor. Between these trabeculations are seen many extensive areas of hemorrhage. The tumor tissue itself appears as greyish yellow islands also embedded in the connective tissue stroma.

"The kidney on section shows some reduction in amount of cortical material. The pelvic fat is markedly increased and the pelvis is somewhat dilated. The calyx of the upper pole shows some dilatation.

"Sections microscopically present a typical picture of a cortical adenoma of the adrenal. The tumor is made up of large polyhedral cells lying between many small vascular channels. This is not the usual picture of the typical Grawitz tumor or hypernephroma. There is no evidence of invasion of the kidney. Some of the sections show extensive hemorrhage into the tumor while in other places infarcted areas are seen.

"Diagnosis—Adenoma of the adrenal cortex."





FIGURES 2 and 3. Low and high power microphotographs of tumor. (See Dr. Smith's pathological description.)

COURSE

The patient rallied quickly from the shock and made an excellent recovery. The wound became somewhat infected but cleared up under Dakin's solution irrigations and healed soundly without hernia. The patient left the hospital in excellent condition and reports herself as well. The diffuse pigmentation of the skin disappeared soon after operation. Blood pressure at discharge was approximately the same as on admission.

COMMENT

The case reported is interesting from several points of view. The mass on palpation was typical of an enlarged spleen, the pyelograms were typical of a large hypernephroma, as were

the operative findings. The pathological examination alone settled the diagnosis and prognosis.

No symptoms of virilism were noted before or after the nature of the tumor was known. The patient did, however, show quite marked generalized yellowish-brown pigmentation of the skin, which completely disappeared in a short time after operation. The pigmentation is rare and it seems unusual that it was present without other symptoms of the syndrome.

It is surprising, in reviewing the case, that more emphasis was not laid on the bleeding noticed at stools. The patient felt that the blood was vaginal in origin, and as she was a very intelligent person and a nurse, and as the urinalysis was repeatedly negative, this symptom was not carefully investigated until she had been under observation for some time. Even after operation it is not certain that there was hematuria. The growth had not invaded the kidney tissue, but was attached to it, and if it caused blood in the urine, this must have been due to pressure on the kidney.

At first glance at the operation, when the abdomen was opened, it seemed that the tumor was inoperable. On further investigation, however, it was evident that it could be freed more easily than was at first anticipated. The fact that this mass at the first part of the operation was seriously viewed as possibly inoperable, particularly since it was considered malignant, should make us have in mind the possibility of this benign lesion in any large kidney tumor. When doubt exists, frozen sections should be made before refusing to attempt removal of the tumor.

SUMMARY

1. Adenoma of the adrenal cortex is a rare tumor, at times producing the syndrome called "virilism."

2. All proven cases discovered clinically have occurred in children or in adult females. Symptomless adenomata of the adrenal cortex have been found in adult males at autopsy.

3. These tumors are true adenomata of the adrenal cortex and are usually single. They may undergo malignant degeneration.

4. Adenoma of the adrenal cortex may cause no symptoms, may produce symptoms of virilism, or may be evident first simply as an abdominal tumor.

5. Surgical removal of these tumors is indicated.

6. A renal tumor, suspected of being a hypernephroma in the absence of metastasis, should be operated upon because of the possibility that the tumor will be a non-malignant, removable adrenal cortex adenoma.

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AN OUTBREAK OF GASTRO-INTESTINAL DISTURBANCE FOLLOWING THE EATING OF CHOCOLATE CREAM PIE*

BY N. A. NELSON, M.D.†

ONE hundred and fifty-one persons in Boston, Charlestown and Somerville were ill on the afternoon of July 16, 1928, with an acute gastro-intestinal disturbance, characterized by severe abdominal cramps, vomiting, diarrhea, and in many cases, collapse.

Three industrial concerns reported 142 of the cases; the Ford Motor Company, Somerville, ninety; the S. M. Howes Company, manufacturers of fire-place equipment, Charlestown, nineteen; and the Revere Sugar Refining Company, Charlestown, thirty-three. The remaining nine were employes of Boston newspapers and of a Boston chain-restaurant company.

The illness was of such severity that seventy-eight cases, or 55%, were known to have been treated in hospitals. Many of the remainder were cared for by physicians at home.

There was no common industrial hazard at the three plants. No outbreak was reported among other users of Metropolitan water with which the three are supplied. Two entirely unrelated milk supplies were used, one at the Ford Company and the Revere Sugar Refinery and the other at the Howes Company. Neither supply overlapped the other at any plant.

Foods were sold at all three, but at no other plants, at noon on the day of the outbreak, by a Boston chain-restaurant company. The only foods common to all three were a box-lunch and coffee. The box-lunch consisted of three sandwiches, (jelly, ham and corned-beef,) a pear, a fig-newton, and a piece of so-called chocolate

*From the Massachusetts Department of Public Health.

†For record and address of author see "This Week's Issue," page 1174.

cream pie. Each sandwich and the pie was wrapped separately in waxed paper and the whole enclosed in a pasteboard carton.

One hundred and twenty-three complete lunches, ten extra ham and beef sandwiches, twenty-six extra pieces of chocolate cream pie and sixty-two individual bottles of coffee were sold at the three plants.

At the Howes Company, the fifteen employes who bought lunches were ill. Four others ate part of a friend's lunch, three of them sharing only the chocolate cream pie. All four were sick. None of the remaining seventy-six was ill. Only three of those sick drank coffee.

At the Revere Sugar Refinery one entire lunch was not eaten and was secured for examination. Twenty-seven of the thirty-one employes who ate lunches were ill. The other four took copious doses of magnesium sulphate at the first report of illness, had complete evacuation before 5 P. M., and were not ill. All of the six who bought only chocolate cream pie were ill. None of the remaining 238 employes was affected. Only seven of those sick drank coffee.

At the Ford Company, only sixty-seven of the ninety ill were traced. Forty-nine of these ate the entire lunch, three ate parts of the lunch including the chocolate pie, twelve ate only the pie and three ate none of the foods in question. Only eleven of the sixty-seven drank coffee.

A study of 120 of the 151 cases was made, sixty-seven of the ninety ill at the Ford Company, all of the nineteen at the S. M. Howes Company, all of the thirty-three at the Revere Sugar Refinery and one employe of the chain restaurant company.

Foods Sold, Number Ill and Number Employed at the Plants

Food	No. Sold	Ford Co.	Sugar Refinery	Howes Co.
Coffee (bottles)	62	39	13	10
Jelly Sandwich	123	76	32	15
Ham Sandwich	123 to 133*	76 to 86*	32	15
Beef Sandwich	123 to 133*	76 to 86*	32	15
Pear	123	76	32	15
Fig-Newton	123	76	32	15
Chocolate Cream Pie	149	96	38	15
Number Ill	142	90	33	19
Number Employed	1132	762	275	95

*Assuming that the ten extra sandwiches were either all ham or all corned-beef. The number of either is not known.

Study of 120 Cases

Nature of the Illness

1. *Incubation Period*

Lunch was eaten at all three plants between 12 o'clock noon and 12:30 P. M. The onset of the first case was at 1:30 P. M., the majority were ill at 2:30 P. M., and all but ten before 4:00 P. M. Nine of the ten were sick at 8:00 P. M., and the onset of the last case was at 4:00 A. M., July 17. The incubation period, therefore, in all but ten cases was between one hour and three and one-half hours.

2. *Symptoms*

The onset most frequently was characterized by acute abdominal cramps followed quickly by vomiting and in a short time by diarrhea. Several of the victims collapsed at or soon after the onset though unconsciousness was not reported. Several instances were noted of transient rigidity of the upper and lower extremities during the acute stage and many of the patients complained of numbness of the fingers and toes and pains in the "muscles" and "bones". Pulse was so variable as to be not characteristic. Only twenty-eight temperatures were taken of which five ranged between 100° and 101.5° F., and seven were subnormal from 96° to 97.4° F., and sixteen were normal.

3. *Duration*

Four hospitals admitted seventy-eight patients. Within twenty-four hours seventy were discharged and the remaining eight left within forty-eight hours. About twenty-five of the Ford employes had returned to work on July 20 and on July 23 some twenty odd were still absent. General weakness and nausea were given as reasons for remaining away from work. No fatalities were reported.

Etiology

It has been pointed out that industrial hazard, water supply and milk supply may be eliminated as causative factors. Only twenty-one of the 120 persons drank coffee and it, therefore, had no causal relationship.

Of the 120 persons, ninety ate one box-lunch apiece; two divided one lunch between them. The lunches were all completely consumed, except for one jelly and three corned-beef sandwiches, two pears and two fig-newtons. In addition to these ninety-two, one ate a ham sandwich and chocolate cream pie; twenty-three others ate only chocolate pie, and one (a restaurant employe) ate chocolate pie, yankee pot roast, gravy and green peas. The chocolate pie

was eaten by 116 (96.7% of the 120 individuals investigated). Pie only, of all the foods in question, was eaten by twenty-four or 20%, of these 120 individuals.

PER CENT. OF 120 ILL WHO ATE CERTAIN FOODS

Food	No. Eating Food	Per Cent. Eating Food
Jelly Sandwich	90	75.0
Ham Sandwich	92	76.7
Beef Sandwich	88	73.3
Pear	89	74.2
Fig-newton	89	74.2
Chocolate Cream Pie	116	96.7

Three of the four who were ill but who did not eat pie ate no foods supplied from the restaurant. All three were Ford employes who had drunk milk said to be sour. All complained of "sour-stomach", one vomited once and another several times. It is our opinion that none of them was made ill by food but that all were affected sympathetically by seeing so many of their fellow-employes sick. The fourth of this group did not eat pie but ate the jelly, ham and corned-beef sandwiches and fig-newton. She had a history of having left work on other occasions because of gastro-intestinal disturbance.

THE CHOCOLATE CREAM PIE

The pie was made on Sunday, July 15, between 2:00 and 6:00 P. M. It consisted of two layers of cake separated by a cream mixture and covered with chocolate icing. The cake was made for seventy-one pies in one batch, the icing in one batch and the cream in two batches.

Inspection of the raw materials led to no suspicion of them. All of them came from stocks used in preparing many other foods. None of the employes having to do with any part of the pie-making gave a history of gastro-intestinal disease or disturbance. Stools from all of them were negative to typhoid and para-typhoid.

Both the cake and icing were subjected to high temperatures long enough to sterilize them. The cream, however, consisting of sugar, cornstarch, flour, salt, eggs, butter, milk and vanilla flavoring, besides being a good medium for bacterial growth, was subjected for not more than two or three minutes to a temperature just below the boiling-point. The finished pies were kept at room temperature up to the time of their consumption and those for the box-lunch department remained in the warm bakery until the following morning.

Conflicting stories were told about the cream filling. The chief baker and the baker who prepared it asserted that the two batches were not mixed together prior to spreading the cakes. The baker who spread the mixture could not be reached until twenty-four hours later and he insisted that they were mixed.

However, it is interesting to speculate upon the possibility that they were not mixed. There were seventy-one pies. The two batches of cream were in the proportion of four to three. All but about a pound of the cream was used. Therefore, about forty-one pies may have been spread with cream No. 1 and thirty with cream No. 2. The box-lunch department received twenty-five pies. These were cut into eight pieces, a total of 200, of which 149 were sold at the three plants. One hundred and forty-two employes were ill. The remaining forty-six pies went to restaurants of the company. These were cut into six pieces, a total of 276, of which sixty-nine were returned. Thus 207 pieces may have been sold and eaten. In spite of front-page newspaper publicity for several days, only nine persons outside the three plants were reported ill. It seems impossible that if all the pies had been contaminated, no more than nine persons would have been made ill by 207 pieces of pie when 142 people were made so severely ill by 149 pieces, that 55% of them required hospital treatment.

The pies were spread with cream all at one time on a large table and then removed to trays. It is conceivable that the same order was followed in removing the pies to the trays as in spreading them so that most of those with batch No. 2 cream were in the trays sent to the box-lunch department.

EXAMINATION OF THE PIE

Samples of all the foods in the box-lunch were examined in the laboratories of the Boston City Health Department, the Massachusetts Department of Public Health and by Dr. E. O. Jordan of the Department of Hygiene and Bacteriology, University of Chicago. In the two latter laboratories the filling of the chocolate cream pie was the only material which yielded anything of interest. Both laboratories found an organism of the colon group, a staphylococcus and a streptococcus. We understand that this is essentially what was found in the Boston City Laboratory. Dr. Jordan found, in addition, "a small rod of questionable identity". Cultures of the cream as well as emulsions of the cream itself injected intraperitoneally into white mice at the State Laboratory made the mice uncomfortable but not definitely sick. Exploratory punctures yielded an exudate containing intracellular gram positive cocci in pairs which on cultivation proved to be staphylococci. The streptococcus was not hemolytic, did not grow well and disappeared. Dr. Jordan's streptococcus in milk culture was fed in large quantities to monkeys without producing any symptoms. The pie itself, fed to a monkey, gave no result. Neither laboratory found any organism of the para-typhoid-enteritidis group.

Bacteriological examinations of the vomitus of one patient and stools from sixteen others

collected during the acute stage of the illness were negative for typhoid and para-typhoid organisms.

The possibility of non-bacterial poisons was considered. Non-poisonous insecticides had been used regularly about the bakery and there had been no change in the brand for many months. Rat-trapping was done one week before, on July 9, without poison. The only rat poison ever used was sodium fluoride. Nothing poisonous to human beings could be traced to the bakery. Chemical analysis of the pie at the State Laboratory yielded no arsenic or antimony.

CONCLUSIONS

Epidemiologically, the chocolate cream pie apparently was the cause of the outbreak. The cream filling of this pie was a good bacterial medium which, together with the long storage over-night in the warm bakery makes it the part of the pie most likely at fault. The cake and icing were heat-sterilized. In spite of conflicting statements, it seems probable that the second, or smaller batch, of cream was responsible for the outbreak.

What the causative agent was remains unknown. The short incubation period points to a chemical substance but whether a bacterial toxin or some non-bacterial poison was not determined.

So little is known about "food-poisoning" that even with the suspected food at hand, unless the poison is one of the common chemicals or the product of the few better-known "food-poisoning" bacteria or the food itself is a poison, the causative agent is seldom identified. As Dr. Jordan writes, "This is the sort of experience that we have nine times out of ten in attempting to trace down these food-poisoning outbreaks".

Acknowledgment is made of the use of material from the reports of Dr. E. O. Jordan; of Miss Edith A. Beckler, Bacteriologist, Massachusetts Department of Public Health; and of Mr. Herman C. Lythgoe, Director, Division of Food and Drugs, Massachusetts Department of Public Health. I wish also to express my appreciation of the wholehearted co-öperation given by Dr. C. E. Mongan and the Staff of the Somerville Hospital, the officials of the Ford Motor Company, the Revere Sugar Refining Company, the S. M. Howes Company, and the chain-restaurant company.

CAMPAIGN FOR THE PREVENTION OF BLINDNESS

A nationwide educational campaign for the prevention of blindness and the conservation of vision among the industrial workers of America and among their families will be launched immediately as a joint effort of the American Federation of Labor and the National Society for the Prevention of Blindness, it was announced Nov. 28 by the latter following its annual meeting.

The Federation of Labor is now joining hands with this Society for an intensive campaign within the membership of the Federation because of requests for assistance in health education which have come to the Washington headquarters of the A. F. of L. from various state and local labor bodies and because of the growing seriousness of the eye hazards of industrial occupations.

In announcing the campaign, Lewis H. Carris, Managing Director of the National Society for the Prevention of Blindness, declared: "The campaign is being undertaken because of our conviction that the eye hazards of industrial occupations—that is, accidents, diseases affecting the eye, and eyestrain—now constitute probably the most serious cause of blindness and impairment of vision among workmen in America. It is the belief of the officers of both organizations that a very large percentage of industrial blindness is preventable and that many of the eye hazards in the home, on the street and in other places outside of industry, which at present threaten the sight of the wives and children of our workmen, are also avoidable."

> "The industries of this country are at present paying approximately $10,000,000 a year compensation to workmen who have been totally or permanently blinded while at work; this expense is inevitably reflected in the cost of commodities and thereby in the cost of living.
>
> "The direct loss to the working men and women of America through lowered efficiency or earning capacity following blindness or serious impairment of vision is probably much more than $10,000,000 a year."

"Close students of industrial conditions are now convinced that 98 per cent. of all industrial accidents are preventable."—*The National Society for the Prevention of Blindness.*

WHO ARE THE VICTIMS OF PELLAGRA?

Children 2 to 15 years of age whose families have too small incomes to give them enough of the right kind of food—these are the favorite victims of pellagra, says the report of the U. S. Public Health Service on the findings of the recent study of endemic pellagra in certain mill villages of South Carolina. Sanitary conditions did not seem to have any consistent influence on the prevalance of the disease, but its fluctuations from year to year appear to have been bound up with fluctuations in economic conditions.

SMALLPOX IN MAINE

An epidemic of smallpox has been in progress in Brunswick, Maine. Strict quarantine regulations have been in force and over 6700 residents of Brunswick have been vaccinated. Thirty-one persons have been ill with the disease.

It is hoped that the spread of the disease has been checked.

THE NEW HAMPSHIRE MEDICAL SOCIETY

THE DIAGNOSIS AND TREATMENT OF UTERINE CANCER*

BY HENRY SCHMITZ, M.D., F.A.C.S.†

Introduction

DEATHS from carcinoma of the female sex organs are about eleven times more frequent than those from the male sex organs. According to statistics on cancer deaths from England and Wales during the years 1911 to 1920 the cancer deaths from female sex organs numbered 88405 and from male sex organ 8506. Pearl, in reviewing the autopsy material at The Johns Hopkins Hospital, collected 816 cases of malignant tumors in the first 7500 consecutive autopsies. Of the 816 cases 610 were carcinomas, and 206 or 25.26 per cent. were sarcomas or some other form of malignant tumor not sarcomatous. Six hundred and forty-eight were in white persons and 168 in negroes. The percentage frequency of malignant tumors by site, sex and race was as follows:

Location of Primary Tumor	White Males	Negro Males	White Females	Negro Females
A. Skin	2.90		1.28	3.80
B. Alimentary Tract, Liver and Pancreas	50.24	64.04	33.33	22.78
C. Reproductive Organs, Primary and Secondary	8.94	8.99	44.87	63.29
D. Excretory System	10.63	5.62	2.14	3.80
E. Respiratory System	3.62	7.87	0.85	1.27
F. Endocrine Organs other than Sex	2.90	1.12	2.14	
G. Skeletal and Muscular Systems	2.90	3.37	0.42	
H. Nervous System and Sense Organs	11.11	2.25	8.97	1.27
I. Lymphatic System	5.31	6.74	5.13	2.52
K. All other organs	1.45		0.85	1.27

Malignant tumors have their primary location most frequently in the alimentary tract in male persons and most frequently in the reproductive system in the female persons. If malignancy in the alimentary tract in male and in the reproductive organs in the female could be prevented, then cancer would retire at once to a relatively unimportant place among the causes of death.

Pearl also compared the autopsy material with the deaths from cancer in the U. S. Registration area of 1914 in regard to cancers of the female primary and secondary sex organs. The results were as follows:

	Johns Hopkins Hospital Autopsies		U. S. Registration Area 1914	
	White Females	Negro Females	White Females	Negro Females
	Total cases 105	Total cases 50	Total deaths 12461	Total deaths 795
Location	Per cent.	Per cent.	Per cent.	Per cent.
Ovary	20	12	4	2
Uterus	50	56	55	73
Breast	30	32	41	25

*Read at the Annual Meeting of the New Hampshire Medical Society, Manchester, N. H., May 15, 1928.

†For record and address of author see "This Week's Issue," page 1174.

The uterus is, therefore, the sex organ in the female most frequently invaded by carcinoma.

Carcinoma is a dangerous disease and usually kills the victim. The frequency of occurrence is apparently on the increase. Probably 125,000 people will die from the disease this year. Its victims are usually in middle life when they are most valuable and useful to our economic organization. There is no known specific cause but a suggestive etiology, namely, chronic irritation and chronic inflammation. Cancer occurs at all ages and attention should be called to the fact that it is more frequently seen in the third decade than in any other. Cancer can be cured by attacking it in its beginning stage. Unfortunately early carcinomas do not cause any symptoms. The clinical and diagnostic enumeration of the symptoms and signs in our textbooks is that seen in advanced cancers and should be changed to conform with our newer methods of teaching. Unfortunately we do not possess a specific diagnostic test for carcinoma. Early carcinoma is always associated with some inflammatory process. The persistence of such inflamed areas after proper and accepted medical treatment may be a bad omen and should lead to an excision and not incision of the suspicious area and a microscopic examination of all the tissues to rule out or rule in carcinoma.

The frequency of carcinoma of the uterus is the reason for discussing this subject with you and particular attention will be given to the early diagnosis and prognosis. The latter depends mainly on two factors, viz., the clinical extent of the disease and the degree of the histological malignancy. The activation of the defensive powers of the host are of equal importance, but its nature is not as yet thoroughly understood and, therefore, will not be considered.

The Early Diagnosis of Carcinoma of the Cervix

Every cancer begins as a solitary focus, a nodule. It never grows in healthy tissues or organs. It does not possess a limiting capsule

as does a benign growth, but is infiltrating like the roots of a tree. A carcinoma probably arises from an epithelial inflammation which stimulates the epithelial cells to proliferate. The chronic inflammation causes a decrease in the differentiation activity of the epithelial cells. The cells become atypical and their growth becomes uncontrolled. The distinguishing characteristics of a malignant growth from a benign growth are the atypical epithelial proliferation, the uncontrolled growth, the invasion or infiltration of the parenteral tissue, the destruction of the parenteral soil, the irregular cell forms, the many and irregular divisions of the nuclei, the extension into the blood and lymph streams, the formation of metastases in distant organs, and finally, the tendency to recurrence after extirpation.

The diagnosis of the first or nodular stage of carcinoma of the vaginal portion of the cervix cannot be made by inspection or palpation because nodules of benign nature are seen more frequently than nodules of a malignant character. Harmless nodules are the follicular erosions. If they are punctured mucus exudes. Should the puncture cause bleeding then a diagnostic excision must be made, for the nodule is probably malignant. The subsequent histological examination alone can give us a positive diagnosis.

The second stage of carcinoma is that of ulceration. It results from the characteristic and peculiar tendency of carcinoma cells to degeneration or decay. This tendency is possessed by all malignant growths and is caused by the poor blood supply. The ulcers are usually deep, are excavated, have sharp mouse-eaten like edges and an indurated periphery. The ulcerations must be differentiated from papillary erosions. If an ulcer of the vaginal surface of the cervix is touched with a cotton applicator and does not bleed it is probably benign. The carcinoma ulcer, however, bleeds on local irritation and the blood is arterial and the flow is continuous. A diagnostic excision should be immediately made and the excised tissue examined microscopically to determine its benign or malignant nature.

These two initial stages do not cause specific symptoms unless irritated locally as by a gynecological examination or cohabitation. A more or less profuse discharge without color or odor may be present, probably resulting from the coexisting inflammation.

The third stage of portio carcinoma shows friability or necrosis of tumor tissues. The tendency to central necrosis or friability is a characteristic sign of advanced cancer disease. It is always accompanied by a reddish brown or sanguinous discharge, and as infection rapidly ensues a cadaveric or putrid odor becomes associated. Hemorrhages at irregular intervals usually occur after local irritation.

The differential diagnosis of portio cancers comprises not only the follicular and papillary erosions, but also tuberculous ulcers, luetic chancre, chancroid and sarcoma. The microscope will aid in the determination of the nature of the lesion.

The first sign of carcinoma of the cervical canal mucosa and the body of the uterus is irregular hemorrhages. These cancers are especially deceiving because the external os and the vaginal mucosa may appear perfectly normal. If under strictest aseptic precautions a sound is introduced into the cervical canal and the uterine cavity and a thin stream of bright red blood escapes from the cervical canal, then this observation may be regarded as highly suspicious of malignancy especially if the trickling of blood continues for some time after the manipulation. These signs are a contributary means of arriving at a diagnosis and should not be conclusive. Hence dilatation of the cervical canal, diagnostic curettage and immediate frozen tissue examination must be done to render an immediate and correct diagnosis.

The differential diagnosis of corpus cancers includes myomata, accidents of pregnancy, abortion, adenomyomata, chronic hyperplasia of the endometrium, tuberculosis of the endometrium, chronic metritis, sarcoma, and so forth.

The early stages of carcinoma of the uterus, namely the nodular and ulcerative stages are symptomless. As soon as friability or necrosis occurs then hemorrhages appear. Hemorrhages from the uterus may take place as menorrhagias or profuse menstruations, or as metrorrhagias or hemorrhages independent of the menstrual flow. The former may be prolonged or too profuse menses, termed hypermenorrheas. Any increase in the menstrual flow either in quantity, duration, or frequency, or metrorrhagia, demands thorough investigation to determine the underlying cause no matter at what time of life it appears. Hemorrhages occurring after the menopause very frequently mean cancer. All uterine bleeding at any period of life, either increased menstrual flow or bleeding that does not occur synchronously with the physiologic menses, must be viewed with grave suspicion until the cause has been proven to be benign. Every woman suffering from uterine hemorrhages should be examined and, if the cause does not become evident, the uterus should be curetted, suspicious looking nodules and ulcers should be excised and all the tissues examined microscopically. Such diagnostic curettages and excisions of tissues should always be done immediately.

A leucorrhea also requires investigation and immediate diagnosis. In the absence of recent infections and palpable tumefactions of the adnexa, the discharge probably comes from the cervix and is an expression of a chronic cer-

vicitis which should be treated. If it does not respond to the standard medical treatment especially electro-cauterization then an amputation should be done. The cervical tissue must always be carefully examined microscopically.

The question naturally arises, if the early nodular and ulcerative stages of cervical carcinoma do not cause symptoms, how may the physician detect, yea discover such incipient cancer? There is in progress an irresistible movement toward preventive medicine in the conservation of personal health. It properly comes under the jurisdiction of the general practitioner of scientific medicine who is trained both in preventive measures and in curative therapeutics. Such a physician should have access to the necessary laboratory facilities. Occasionally a specialist will have to be consulted to settle muted points of diagnosis.

The general practitioner should examine every recent mother within six to eight weeks following labor and look for birth injuries to the cervix. If there are lacerations that did not heal because they had become infected they should be kept under observation by periodical re-examinations. Eversions of the endocervical mucosa or eversions persisting after medical or local treatment should be removed by proper surgical procedures which consist either in trachelorrhaphy with bilateral lacerations, or trachelorplasty if the lacerations and erosions are very extensive.

The general practitioner should also advocate periodic health examinations. During these he can inform and instruct his patient in the import of abnormal genital bleeding and discharges so the patient will know the importance of an immediate consultation should such symptoms appear. The physician should also include in the physical examination palpation and inspection of the genital organs. Should erosions, polypi, or lacerations be discovered they should be treated by the so-called minor gynecologic procedures. Should they persist then tracheloplasty should be done. The removed tissues must be examined microscopically to rule out malignancy. If malignancy should be diagnosed then the indicated treatment must be applied at the earliest possible moment. Only thus shall we be able to detect cancer of the uterus in its incipient and curative stage.

The diagnosis of carcinoma of the cervix would be incomplete without a determination of the extent of the growth. By physical, bimanual, and endoscopic examinations the answers to the following five questions should be given:

1. Is the cancer clearly localized in the vaginal portion, the cervical canal or the uterine body?

The portio growth having the size of a navy bean is probably clearly localized. Normal movability of the uterus would mean localization in the cervical canal or uterine body. It is determined by traction downward with a tenaculum forceps attached to cervix. A normally movable uterus can be displaced downwards until the cervix appears at the vaginal outlet without causing distress to the patient or using an unusual amount of force.

2. Does doubt exist on the absolute localization? A dough-like consistency of the paracervical tissues and a decrease of mobility means beginning infiltration of the tissues adjacent to the uterus.

3. Are the parametria and the adjacent organs of the regional lymphnodes involved and are the invaded structures (a) movable or (b) fixed?

Such involvement can only be revealed by recto-abdominal palpation, cystoscopy and proctoscopy. Bullous edema of the posterior bladder wall means involvement of the vesico-uterine or vesico-vaginal septum. Thickening, infiltration and loss of mobility and elasticity of the anterior rectal wall and irregularity and edema of the rectal mucosa as elicited by rectal palpation and seen through the proctoscope are indicative of extension of the carcinoma into the rectal wall. The hypogastric and iliac lymphnodes can be palpated through the rectum just beneath the brim of the pelvis at the bifurcation of the common iliac artery if the patient has been completely relaxed by an anesthetic.

4. Have metastases occurred in distant organs? and

5. Do other grave diseases complicate the cancer as coexistent tuberculosis, diabetes mellitus, cardiac and nephritic lesions, and so forth?

The answers to these five questions enable one to group the carcinomata clinically. The indicated method of treatment is based on these groups.

We have adopted four groups, namely:

1. *The clearly localized carcinoma:* The tumor is the size of a navy bean and the uterus has normal movability.

2. *The borderline carcinoma:* There is a wide or peripheral invasion of the cervix or body of the uterus, a doughy consistency of the paracervical tissues, and a decreased mobility. A pull on a tenaculum forceps attached to the cervix does not result in a complete downward displacement. A uterus normally movable can be displaced downward to the vaginal introitus without any resistance being offered.

3. *The inoperable carcinoma:* Infiltration of one or both parametria with or without regional lymphnode involvement, with or without invasion of adjacent organs, but the structures are, as a mass, still movable.

4. *The terminal carcinoma:* This tumor is characterized by fixation of tissue and wide local extent of the disease, "the frozen pelvis," and distant metastases.

5. The complicated carcinoma is one associated with general disease that are considered poor surgical risks. It would contraindicate surgical eradication.

THE TREATMENT

The grouping of primary carcinomata enables one to determine the indicated method of treatment: Group 1 cases are treated either surgically or with radium. Group 2 cases are given radium and x-rays according to our combined method. Group 3 cases indicate radium and x-ray therapy; and Group 4 cases should be treated palliatively. A cancer that is fixed always offers an unfavorable prognosis and therefore such a case should not be unnecessarily subjected to expensive and extensive treatment.

Before subjecting a patient with uterine cancer to operation we must always determine whether operation could be successfully performed. Operability depends 1. *upon normal mobility.* Mobility is normal if the uterus can be pulled down to the introitus vaginae without resistance with a tenaculum forceps applied to the cervix. 2. *The cervical canal must be patent.* If it is not patent pyometra may exist. A sound inserted into the uterine cavity through the cervical canal gives evidence of presence or absence of pyometra. 3. *Afebrility of patient.* If fever is present the surgeon should wait 14 days after temperature has subsided before operating. 4. *Absence of pathogenic bacteria.* If the latter are present, operation is contraindicated. The Phillip-Ruge test is probably the simplest. Ten cc. of blood taken from the patient's arm vein are inoculated with the cervical discharge. If cultures grow within 24 hours pathogenic bacteria are present. If growth did not occur then operation may proceed without worry about a subsequent septic peritonitis. 5. Lastly, determine *the surgical risk* the patient offers. If all of these five factors can be answered in the affirmative then operation is safe. If only one of the factors should be negative operation is absolutely contraindicated.

The radiological treatment of carcinoma of the uterus consists in the intrauterine insertion of 50 mg. of radium element for 30 hours within weekly intervals repeated three times. This amounts to a total of 4,500 milligram element hours, a dose which suffices for the average case. As it is impossible in the Groups 1 and 2 cases to determine whether the parametria or regional lymphnodes are involved, these regions are treated with either the short wave x-rays or the radium pack. The factors of the x-ray treatments are 211 kilovolts, 65 cm. or 26 inches focus skin distance, 25 milliamperes load, 0.75 mm. copper plus 1.0 mm. aluminum filter, fields 15 cm. wide and 20 cm. high, duration three to five times 10.5 minutes depending on the size of the patient. The seances are given three to five days apart. Two to four fields are used. With an antero-posterior diameter of 17 to 21 cm. two fields are used, with an antero-posterior diameter of 22 to 24 cm. three fields are used, and with an antero-posterior diameter of 25 and 26 cm. four areas are used. Using a table of equal intensity curves obtained in a water phantom one can calculate the number of fields and the duration of the treatment for each case. It is recognized that an homogenous radiation of 800 r throughout the pelvis will probably accomplish the arrest of the growth. The radium pack consists in an application of 24,000 mg. element hours at 10 cm. focal skin distance through an anterior and a posterior portal.

The palliative treatment has for its main object to render the tumor area aseptically clean. It is a known fact that internal incurable carcinomas in an aseptic site may progress for many months without complaint, and death comes as a release through exhaustion and cachexia, accompanied by comparatively little pain. In Group 4 carcinomas we therefore gently remove the necrotic tissue carefully and apply thorough methods of combating infection. A 1200 mg. element hour application of radium arrests the bleeding in a large number of such cases. The application of acetone as introduced by Gellhorn is especially beneficial. Adequate drainage and vaginal douches are useful in the intervals between the acetone applications. If the bladder should become involved and secondary infection ensue then vesical irrigations should be used. Boric acid solutions followed by 2% mercurochrome or 2% silver nitrate instillations are the solutions used. The mercurochrome or silver nitrate should be retained for about one hour. The internal administration of diuretics, acids and alkalies is not necessary. A pain in one side of the pelvis is frequently caused by a compression of the ureter with the growth. Ureteral catheterization and pyelogram will clear the diagnosis. If obstruction is present then dilatation and drainage of the kidney pelvis will relieve the patient. Invasion of the rectum and ulceration into the rectum are treated by the daily administration of mineral oils to which agar may be added, to render the stools a soft consistency. An ounce or two ounces in an equal amount of cream should be taken each night. Each bowel evacuation should be followed by a rectal irrigation with normal saline solution until the water returns clean. If an obstruction should ensue then a colostomy is indicated. Invasion of the pelvic nerves with cancer or pressure on the nerves by the growth probably indicates coal tar products and finally morphine and its derivatives.

The correct treatment of carcinomata therefore depends on: 1. an early diagnosis; 2. a

grouping of the cases according to the extent of the growth; and 3 on the application of the correct method of treatment.

The five year end-results obtained in 332 cases of primary carcinoma of the uterine cervix treated from 1914 to 1923 inclusive with the combined radium and x-ray method gave the following results:

Group:	1.	2.	3.	4.	Total
Total number:	23	48	161	100	332
Five year healings:	18	20	20	0	58
Per cent.:	78.27	41.68	12.42	0	17.50

There were 71 cases in Group 1 and 2 which would have been submitted to surgical eradication in a clinic not provided with a radiological division. In these cases treated with radiations we obtained 38 five year good end results, or 53.52 per cent. The cases of Group 4 characterized by fixation of the tumor have all succumbed. They give an absolutely bad prognosis. On the other hand it may be followed that radiation therapy in uterine carcinomas gives results which compare well with those obtained from surgical methods. The inherent dangers of operation in uterine carcinomata can be practically eliminated by observing the contraindications to the operation as cited before.

THE HISTOLOGICAL CHARACTER OF CARCINOMAS

Another question enters into the equation of prognosis of treatment, namely, the histological character of the carcinoma. Schottlaender and Kermauner, Lahm, Martzloff, Broders, Greenough and others have investigated the histopathology of uterine carcinomata. Broders, Greenough and the writer have proven that high malignancy is shown by cells and nuclei of low differentiation, of irregular shape and size, without secretory function, arranged in solid columns, large or small, with hyperchromatism, and with numerous and irregular mitoses. On the other hand a tumor evincing a high differentiation with uniformly sized and shaped cells and nuclei, with few mitoses, with high secretory activity, with a high degree of cell differentiation, and with absence of hyperchromatism indicated low malignancy.

Broders divided his cases into four grades, Greenough into four classes, and the writer into four groups according to the index of malignancy found present.

The deduction must be drawn that high malignancy is shown by cells and nuclei of low differentiation; of irregular shape and size; without secretory function; arranged in solid columns, large or small; with numerous and irregular mitoses and with hyperchromatism. A tumor evincing a high differentiation with uniformly sized and shaped cells and nuclei; with few mitoses; with high secretory activity; with a high degree of cell differentiation; with absence of hyperchromatism; and with a predominance of connective tissue indicates low malignancy.

The following table shows the results:

GREENOUGH'S RESULTS

Class	Pathology	Number of Cases	Number of Cures	Per Cent. of Cures
1	Much differentiation	6	4	66.67
2	Moderate differentiation	19	9	47.27
3	Slight differentiation	43	10	23.26
4	Highly malignant	22	0	0

BRODER'S RESULTS

Grade	Pathology	Number of Cases	Per Cent.	Per Cent. Good End-results
1	Differentiation 100 to 75 per cent. Undifferentiation 0 to 25 " "	82	9.31	90.20
2	Differentiation 75 to 50 " " Undifferentiation	407	46.25	66.16
3	Differentiation 50 to 25 " " Undifferentiation 50 to 75 " "	262	32.04	24.82
4	Differentiation 25 to 0 " " Undifferentiation 75 to 100 " "	109	12.38	10.09

SCHMITZ'S RESULTS

Group	Pathology	Number of Cases	Number of Good End-results	Per Cent. Good End-results
1	Malignancy Index 32 to 44	5	4	80
2	Malignancy Index 45 to 56	33	19	57.58
3	Malignancy Index 57 to 68	26	8	29.62
4	Malignancy Index 69 to 80	2	0	0

The prognosis of the treatment of cancer depends to a high degree on the histological malignancy index. The higher the latter rises the worse will be the prognosis of treatment. In fact a clinical Group 4 carcinoma and a histological Group 4 cancer offer an absolutely bad prognosis regardless of the degree of histological Group 4 cancers. Such carcinomas probably should not be subjected to a useless treatment either surgical or radiological.

Conclusions:

1. The frequency and preponderance of carcinomas of the female reproductive organs has been demonstrated by statistics.

2. The observation has been discussed that the first stages of carcinoma of the uterine cervix do not cause symptoms and that nodules and ulcers are more often benign than malignant. When a cervical cancer causes symptoms then it probably has already progressed to an advanced stage. Hence the microscope must be used to diagnose malignant nodules and ulcers from similar benign conditions.

3. The pelvic examination of all recent mothers and the inclusion of pelvic examinations in periodic health examinations are the only means of detecting chronic inflammations of the cervix which should probably be treated whether they cause or do not cause symptoms. Chronic cervicitis is probably the period of advent of cervical carcinoma.

4. The influence of the extent of the growth and of the degree of the histological malignancy on the prognosis has been shown by statistics on five year good end-results. The indications for the various methods of treatment are based on the clinical grouping. The contraindications for surgery have been given. The factors employed in radiation treatment have been briefly mentioned. The palliative treatment of the incurable stages has been described.

May I express in conclusion the hope that the presentation of this subject will influence you to acquire a more hopeful outlook. May the correct application of the treatment of cervical cancers in all the stages give the unfortunate women harboring such disease a better chance for either cure or relief.

TREATMENT OF UTERINE CARCINOMA*

BY GEORGE C. WILKINS, M.D., F.A.C.S.†

THIS paper will deal with the present day treatment of malignant disease of the uterus, and will consider in particular the results of the author's experience in dealing with this phase of cancer therapy over a period of eight years.

One hesitates about recording results of a small group of cases, but this is the early period of the newer cancer therapy and there is definite value in the collected reports of the smaller groups of cases, especially when they have been followed up consistently. With this motive in mind and with due consideration of the fact that broad conclusions cannot be drawn from a small group of cases, the results of treatment in 95 patients with uterine carcinoma will be reported. These 95 cases are divided as follows:

Primary carcinoma of cervix	72
Recurrent after hysterectomy	8
Carcinoma of fundus	15
Total cases reported	95

Until about the period of the World War surgery was the only widely recognized method of combating cancer of the uterus. For the first few years after the war, radium was considered useful chiefly in the cases which were not operable. In the past eight years the weight of opinion has changed gradually but decidedly in favor of radium as the treatment of choice. There is sound reasoning back of this change of opinion. It appeared that in the borderline cases and in some of the fairly well advanced cases radium made cures, where surgery would have been helpless. Investigators then asked, if the patients with parametrial involvement can be cured with radium, why cannot radium more surely cure the early cases, the so-called operable cases. The answer was, that it could and did cure them. It cured a varying percentage of them without primary mortality. This primary mortality in the radical operation for cancer of the cervix is a serious consideration, for the operation has a 20% mortality rate, 1 in 5 patients operated upon. (Report of Cancer Committee of the American College of Surgeons, 1924).

Radical operation for cancer of the uterus even in the very early cases, is an operation of considerable magnitude, and it is an operation that can be properly and thoroughly performed by comparatively few surgeons. If one is not numbered among these few, one should not attempt the procedure.

Radium treatment is not simple or easy. It requires surgical judgment and a thorough knowledge of surgical technique, surgical pathology and familiarity with pelvic manipulations. Radium should always be considered as a surgical adjunct rather than a therapeutic

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†For record and address of author see "This Week's Issue," page 1174.

entity. Dr. William J. Mayo once said, "Radium is a powerful agent for good in the hands of the expert but an agent for very great harm in the hands of a man without surgical experience or sound clinical judgment, who uses it indiscriminately".

UTERINE PATHOLOGY

This paper does not intend, nor is the time sufficient to discuss in detail the unusual types of cancer pathology. There are two distinct general types: (1) Cancer of the fundus, usually adenocarcinoma, and (2) Cancer of the cervix, usually of the squamous cell type. There are occasionally encountered other types of cancer, such as: Adenocarcinoma of the cervix, adeno-acanthoma of either cervix or fundus, squamous cell carcinoma of fundus, and sarcoma.

In this series all carcinomas of the fundus were adenocarcinomas except one which was squamous cell carcinoma. All cervix cases were of the squamous cell type. Two cases which I treated for postoperative radiation, showed both were adenocarcinomas except one which was cell carcinoma of the cervix.

Pathological specimens were taken in every case, some in the office at the first examination, and some at the time of the first treatment. None were graded by the pathologist as to the degree of malignancy.

DELAY IN SEEKING TREATMENT

Very striking was the delay in seeking treatment exhibited by these women. Upon questioning it was found that they considered the unusual flowing as a frequently expected symptom of the menopause. I regret to say that many delays were due to the fact that the first physician consulted fostered this idea, did not examine the patient and gave them medical treatment. The average delay in the 72 cervix cases from time of first symptom to the time of the first medical consultation was 4.5 months, and in the fundus cases, 8 months. The average delay between first symptoms and the time of seeking treatment was 7.3 months in the cervix cases and 10.5 months in fundus cases.

The length of time symptoms have been observed is not a criterion of the duration of the cancer. Many cancers of the cervix develop and spread for months before bleeding occurs.

AGE

The youngest patient was 29 and the oldest 84. The average age was 53. There were only eight under 40 years of age.

CARCINOMA OF FUNDUS

In this group there have been 15 cases, 5 of whom were operated upon and the uterus removed. These were usually preceded by radiation and always followed by it. Of the 5 operated upon 3 are dead of recurrence, the first indication of recurrence occurring in the vagina in all 3 cases. Of the 10 treated by radium alone 8 are living and well, and one, though living, has a recurrence. The one patient who died succumbed to heart disease, and had no recurrence at the time of her death. Three of the well patients were treated over three years ago, one four and one five years ago. I am not drawing any conclusions from these few cases. I am only expressing my convictions. Most surgeons feel that hysterectomy is the method of choice in treating carcinoma of the fundus, but I believe observation of fundus cases in the next ten years will develop a definite change in opinion. The obviously poor surgical risks were the ones treated with radium by me in the beginning and the successful outcome has induced me to use radium more frequently in carcinoma of the fundus.

METHOD OF TREATMENT

Patients suspected of having adenocarcinoma of the fundus, are anaesthetized, thorough pelvic examination made, and the uterus gently curetted for pathological tissue. Adenocarcinoma can usually be recognized by its appearance. The scrapings are whitish or grayish, and granular, sometimes resembling brain tissue. Pathological verification is made and radium is placed in the fundus for 24 to 30 hours. I use 75 mg. of radium element in two brass tubes covered with rubber, so placed that the bulk of the radium is near the top of the fundus. The next treatment is given the second day following, for the same length of time, and the radium is placed without resorting to anaesthesia. A third treatment is given three weeks later, and in two cases I have given a fourth treatment. In the three treatments the dosage totals about 5000 mg. hours. In the four treatment cases 7000 mg. hours. There has been almost complete absence of disagreeable after-effects in all of these patients.

CARCINOMA OF THE CERVIX

I wish to take exceptions to the common use of the words operable and inoperable as descriptive terms in describing the involvement in these cases. The meaning of such terms vary a great deal, depending upon the viewpoint of the person making the examination. Some are safely operable in the hands of specially qualified surgeons, but if all these were treated with radium, more would be alive at the end of five years than if operated upon by the average surgeon.

One of the basic classifications that has been suggested is that of the Committee on Treatment of Malignant Diseases with Radium and X-ray of the American College of Surgeons.

This classification divides cancer of the cervix into four groups:

CHART I

1.	A	Early favorable.
1.	B	Border line.
1.	C	Broad ligaments involved.
1.	D	Advanced cases.

This classification is determined entirely by the clinical manifestations.

The cases reported in this series, when classified according to this grouping are as follows:

CHART II

1.	A	4
1.	B	8
1.	C	49
1.	D	11
	Total	72

DEGREE AND TYPE OF INVOLVEMENT

Of the total number only 4 showed no fixation of the cervix nor involvement beyond the cervical tissue. These 4 were the only ones that could be considered truly operable. The remaining cases exhibited varying amounts of involvement, from slight extension into one broad ligament to involvement of both broad ligaments, and of the vaginal mucous membrane. Patients with solid fixation, with extensive involvement, should only be given enough treatment to stop hemorrhage.

The two general types of growth which are observed are: (1) the productive cauliflower tumor, and (2) the destructive ulcerating type, in the later stages of which a crater is formed in the cervix.

The only method of determining the extent of parametrial involvement is by rectal examination. From the rectum both broad ligaments can be palpated. In this series the left broad ligament was involved in the proportion of more than 2 to 1 with relation to the right ligament.

The cauliflower type of growth, providing very little of the vaginal membrane has become involved, has responded better to radium treatment than has the destructive ulcerating type. The patient with the cauliflower type of cervix carcinoma comes for treatment earlier than the others because of earlier and more active bleeding.

METHOD OF TREATING CERVIX CARCINOMA

A cathartic is administered the previous night, and the rectum emptied by enema before treatment. The treatment is given in the patient's room, the patient on her back across the bed, with the thighs flexed toward the abdomen. Good light is necessary. One hour before treatment morphia, gr. ¼ and scopolamin, gr. 1/200 are given. No anaesthesia is necessary. A weighted speculum is used to give exposure and the anterior lip of the cervix grasped by a volsellum. The vagina is swabbed out, and the cervix painted with iodine. A specimen is removed with specimen forceps for pathological examination, after which the cervical canal is gently dilated with graduated Hanks dilators. I find these less painful, more efficient and producing less trauma than the usual type of cervical dilator.

The radium element, 75 mg., in the form of silver tubes or needles, enclosed in a brass screen 2 m.m. thick and covered with rubber is placed in the cervical canal. The vagina is then packed with gauze strips, in order to push the rectum and bladder away from the radium. A self retaining catheter is placed in the bladder. This is later connected with a bottle at the side of the bed. With the bladder empty there is much less bladder membrane exposed to the radium rays.

The radium remains in place from 24 to 28 hours. On the second day after, another similar treatment is given, and on the day this treatment is finished, or on the following one the patient leaves the hospital. About three weeks later she returns for her third and last treatment which is given in the same way. In my earlier cases the total dosage was 4800 mg. hours by this method. I am now giving 5500 to 6000 mg. hours. X-ray has not been used.

This method of treatment has been developed from experience and has a logical basis. The first two treatments are all the average patient can stand without developing intense bladder and rectal irritation, and the third treatment is given as soon as the average patient has recovered from the mild irritating effects. Only occasionally do we find a patient who has unusual susceptibility to radiation.

IMMEDIATE RESULTS OF TREATMENT

About a week after the first two treatments the patient may have cystitis, and occasionally rectal irritation with diarrhea. Potassium acetate relieves the former and olive oil instillations the latter. Both usually subside in a week or ten days. About one-fourth of the patients have no disagreeable symptoms. There is a prompt amelioration of the bloody discharge. If there was present at the initial treatment a cauliflower growth, this will have disappeared by the time the patient returns for the third treatment. This is one of the arguments against using the cautery to destroy this tissue prior to radiation.

When examined three months after treatment all signs of disease have usually disappeared, though occasionally a small ulceration, with no odor or discharge, remains. This will have disappeared in six months. Very seldom is there any flowing after the first two treatments.

VARIATIONS IN RADIUM APPLICATION

In large cauliflower growths the first application may be made with buried needles dis-

tributed through the growth. Where the growth is definitely limited to one side of the cervix, or the bulk of the destructive process on one side, needles may be buried entirely in this portion for one treatment. Occasionally Clark's T screen is used, one arm of which holds radium in the canal and the other across the vaginal surface of the cervix.

SUMMARY OF RESULTS OF TREATMENT

In this series of cervix carcinomas are tabulated the result of radium treatment in 80 cases. There were 8 treated for recurrence in the vagina, after hysterectomy performed by other surgeons. One is living without recurrence 3½ years after radiation. One is living, but has a terminal recurrence now, nearly 4 years after radiation. The other six have died.

Seventy-two patients have been treated for primary carcinoma of the cervix, 31 of whom have been treated in the last 3 years and whose records will not be considered.

Of the 41 cases treated 3 or more years ago 15, or 36.5 per cent. are living and free from recurrence.

Of the 27 cases treated 5 or more years ago 10, or 37 per cent. are living and free from recurrence. (See Chart III)

CHART III

PRIMARY CARCINOMA OF CERVIX TREATED WITH RADIUM

	Cases	Dead	Living	% Living
Less than 3 years	31	2	29	
3 to 5 years	14	9	5	35.7%
Over 5 years	27	17	10	37%
Total	72	28	44	

The longevity of patients who succumbed to cancer after radium treatment is shown in Chart IV:

CHART IV

LONGEVITY OF FATAL CASES, AFTER RADIUM TREATMENT

1 lived 5 years
1 " 3 "
2 " 4 "
5 " 2 "

Average longevity 20 months

Thus far we have been fortunate in that no fistulae have developed as a result of radium treatment. There has been no mortality from the radium treatment.

GENERAL CONSIDERATIONS

In the past 10 years many statistics have been given showing the final results in various methods of treatment of cancer of the cervix, and in all reports one may observe that when radium is combined with operation or cautery, the results are less satisfactory than with radium alone. There is probably a definite advantage in combining deep therapy x-ray with radium treatment, as this therapeutic agent will reach the more distant pelvic nodes which lie beyond the reach of radium irradiation.

This subject should not be left without once more urging the members of the medical profession, and chiefly the general practitioners to promptly examine every woman at any age who presents symptoms of irregular flowing or bloody discharge. If the amount of bloody discharge is small, one should be all the more suspicious of cancer. This idea must constantly be transmitted to women throughout the State, as it will mean the saving of many lives if treatment is resorted to at once when indications of cancer are discovered.

CONCLUSIONS

(1) Usually there is unnecessary delay, and sometimes inexcusable delay, in diagnosing cancer of the uterus.

(2) This unfortunate condition can be prevented by instructing female patients to report irregular bleeding, and by promptly examining all patients presenting themselves with such symptoms.

(3) Cancer of the fundus uteri can be cured with radium, and as a therapeutic agent will be used more in the future than in the past.

(4) Radium is the method of choice in treating cancer of the cervix.

(5) In the series reported in this paper, the extent of involvement included the early type, the borderline and advanced cases.

(6) 36.5% of these unselected patients treated 3 or more years ago with radium alone, are living and free from recurrence. 37% of the patients treated 5 or more years ago are living and free from recurrence.

DISCUSSION

DR. JAMES B. WOODMAN, Franklin: I am sure that you will all agree with me that not only the medical profession but the whole population of New Hampshire is greatly indebted to Dr. Schmitz for coming this long distance to present his admirable paper to us today. While the citizens of New Hampshire are but a small number compared to the population of his great city, it is true that cancer and cancer of the cervix is something appalling in our State. I know of no more disheartening condition than that when a patient is sent in to find that the examining finger encounters a nest of nodes and a fixed uterus for which, as Dr. Schmitz and Dr. Wilkins agree, I think, there is no permanent cure.

There is a sharp line of demarcation, it seems to me, between cancer of the fundus and cancer of the cervix. In cases that have come under my observation it appears that cancer of the fundus has a tendency to stay in the fundus for a much longer period than does cancer of

the cervix. I have seen quite a large number of cases where the fundus had grown to quite a large size, where it had become disorganized into pulpy tissue like brain tissue, still no metastases to other organs had occurred though the patient was in the late stage of malignancy. On the other hand, cancer of the cervix has a tendency to get into the lymph stream, and metastases will take place at a much earlier period. This, of course, depends largely on the type and on the grouping which has been already mentioned. Some patients will run the course of the disease in a few months, and others will drag along for years.

It is still a deplorable fact that in New Hampshire the laity and the medical profession are remiss in their attitude toward early examination and consultation as regards carcinoma. The women of New Hampshire know in a general way at the present time and have had it brought to their attention that all abnormalities in bleeding at the menstrual period or the presence of a thick discharge or a discharge of a pink serous nature which causes an itching—that all such things should be investigated promptly. It is to our discredit as a profession that when these patients present their stories often they are sent away without a thorough examination.

At the first moment when we can lay hands upon such a patient she should have a painstaking, thorough examination. We should not only see that cervix but follow the instructions of Dr. Schmitz which are well worth pasting in every man's brain.

It would also seem feasible to make routine examinations of all women, but probably this isn't possible at this time. We make routine examinations of many men to see how their kidneys, hearts and blood pressures are progressing once or twice a year. While the incidence of arteriosclerosis and circulatory disturbances is very large, it is not as large as the incidence of cancer of the female generative organs, and they deserve as much attention as do people with circulatory disturbances.

In closing I would like to ask Dr. Schmitz about his statement on diagnostic curettage. If diagnostic curettage is made, should a frozen section be done immediately? If not, what is the danger of stirring things up and causing metastases?

Dr. Emery M. Fitch, Claremont: Unfortunately Dr. Schmitz had to leave to catch a train, so I will ask Dr. Kingsford to continue the discussion and answer the last question.

Dr. Howard N. Kingsford, Hanover: A great many things that Dr. Schmitz said are very important and I hope they will sink in, especially the matter connected with exploratory diagnosis of carcinoma and especially in connection with the thorough examination of the individual who presents herself to the physician, which is quite frequently overlooked not only by the surgeon but by the general practitioner—they do not make a thorough examination.

Those of us who are interested in the preventive campaign against cancer, and have talked to associations instruct them to present themselves for examination, and they come and see the physician and he does not give them much time. I want to impress this upon the practitioners, and that is to give their patients more time and to make more thorough examinations.

I find there is one thing about which the profession is uncertain, and that is the border-line—you get a letter from a doctor who wants to know whether it is an inflammatory change or whether it is on the border line between that and a malignant change. Now this border line isn't that at all. It means the border line between the primary cancer and the advanced incurable cancer, the stage in between—whether it is operable or inoperable.

I would like to bring up very briefly a number of things we want to bear in mind in connection with the treatment of malignant tumors, especially in connection with a carcinoma of the cervix with radium. In the first place, we want to bear in mind that a tumor originates in the host, it originates in the body and not from outside, it originates from cells in our body which multiply.

Many surgeons say it is impossible to influence certain cells with radium and not influence other cells. There is no question that radium does influence cancer cells and not other cells to the same extent. You can actually see the influence of radium on the cancer cells and not on the connective tissue elements. Also remember that different types of cancer show different changes when acted upon by radium; and the more undifferentiated the cell is, the more it is like an embryonic cell, the more will be the action of radium on those embryonic cells. Remember that many cervical lesions which grossly resemble malignant lesions are not cancer. Also be sure of your diagnosis before you start your treatment and remember that the initial dose is the test dose to determine the reaction of the malignant cells and the normal cells. You can't tell just what is going to happen. Hence it is very important for the individual who uses the radium to be familiar with it. It is a dangerous thing for anyone who is not familiar with it to use.

The object of giving radium is to give a dose that will inhibit the tumor growth and stimulate the formation of scar tissue. This scar tissue occludes the blood vessels, and the cancer cells are starved out.

In my opinion it is not good technique or good surgery to operate on a case of so-called

fixed or inoperable cancer that has become more or less movable after the action of radium. You cannot tell whether this radium has affected all the cancer cells in the surrounding tissue but you can tell that you have this scarified, this new tissue, that it has scarred down and put the blood vessels out of commission. But my opinion would be from the pathology of the tissue to re-treat it or to treat it further with radium and not operate with the knife.

Radium always causes more or less temporary changes in the surrounding cells, and that is what we want it to do. It is a reactive change and not an infectious change. So there is proliferative change in the connective tissue cells and a shutting off of the blood vessels.

There is one thing of which Dr. Schmitz spoke, that is grouping cancer by the mitotic figures. That is nothing new. Dr. Mallory used to stress that very emphatically 20 years ago, though Dr. Schmitz has worked that out by studying a number of sections.

I wanted to ask him a question whether he was able to make these mitotic figure examinations in a frozen section, a specimen sent for examination. It is almost impossible to get a line on the mitosis from that. I have tried to do that but couldn't get any records useful enough for me to tell the surgeon there was any degree of malignancy. When I find mitotic figures, I usually say so, and the surgeon realizes it is a rapidly growing tumor.

The mitotic figures vary in different parts of the section, and I wanted to ask him if they took sections from all over the tumor or whether they took twelve fields in one section. I should think their figures would be better if they took figures from different sections.

Dr. Schmitz took up a great deal of pathology in his paper, and there is one point he brought out very carefully which is important, I think, and that is the first examination of the cervix —you can't tell definitely, as he says, unless you have a microscopic examination, but you can get a pretty good hunch by seeing if it bleeds when you touch it. If you go swabbing it or touch it with a curette, that doesn't count; as he says to wipe it off with a smear of cotton on a stick. If it bleeds then, the probabilities are that it is malignant.

Another thing which is very important is to follow up the case. Don't say to them "I would like to have you come back in a certain time" but say "if you don't come back, we will call it to your attention and we will send someone around to bring you in and then we can find out what progress there is."

Dr. John F. Holmes, Manchester: It seems to me that Dr. Schmitz has given us a most valuable paper. In a short space of time he has presented many interesting and valuable suggestions in the diagnosis and treatment of carcinoma of the uterine cervix that we will do well to remember.

His statement that "every carcinoma begins as a solitary focus a nodule and that it never grows in healthy tissues or organs"—we should give serious consideration: for in the first instance it points to the importance of early recognition of the disease; in the second instance it indicates the possibility of prophylaxis and suggests prodromal symptoms to malignancy (if malignancy never occurs except in diseased tissues or organs—then the presence of disease in those tissues or organs should make one think, as Dr. Schmitz said, of the possible approach of malignancy).

The last suggestion, to my mind, is of most importance, for, if we accept Cohnheim's theoretical embryonic rest as the starting point of malignancy and be convinced that it never develops except in the presence of disease we have the possibility of being able to recognize premalignancy; and, to determine, by the aid of the microscope, malignancy before the clinical symptoms have appeared. I believe that this field offers possibilities of great promise and suggest that it may be developed with the advancing possibilities of pathological study.

Dr. Schmitz laid great emphasis upon early diagnosis. It is believed that malignancy begins with a solitary focus or nodule: if this is true then at this point it can be definitely cured by eradication. Hence a tremendous effort should be made to establish an early diagnosis. This, as Dr. Schmitz says, cannot be made from, so termed, early clinical symptoms —namely, leukorrhea, bleeding, and pain; as they are not present in the early stage of malignancy. Therefore, the close scrutiny with suspicions of any condition or sign suggesting the possibility of malignancy or approaching malignancy in the course of routine examination; and specimen for pathological examination in any case of doubt is to be strongly urged.

Treatment of malignant disease of the uterine cervix: It seems to me that the histological malignancy index—the histological classification of carcinoma of the cervix as outlined by Greenough, Broder, Schmitz and more recently by Cutler is of great importance—both from the standpoint of treatment, and of prognosis.

There are some types that should unquestionably be treated by irradiation alone—namely those with a high malignancy index the undifferentiated type, early to metastasis, highly radio sensitive. Whereas those with a low malignancy index, slow to metastasis, radio resistant may be treated either by irradiation or surgery—provided of course that it is an early case. In the border line and further advanced cases, surgery should not be considered. It appears that cervical malignancy, in the main, is highly radio sensitive. Surely the treatment of this difficult affliction by irradiation, by ra-

dium and x-ray, has produced remarkably gratifying results. Dr. Wm. P. Healey concludes after a review of cases of carcinoma of the cervix treated at the Memorial Hospital, New York, that irradiation by radium and x-ray is the treatment of choice for all cases. That "surgery is no longer justifiable in the treatment of carcinoma of the cervix—based upon five year end results". I believe however that five years is not sufficient time upon which to base conclusions and, given a definitely localized lesion that it can be more surely eradicated by excision than by irradiation, hence I feel that excision may still have a place in the treatment of uterine carcinoma.

May I express my deep appreciation for the privilege of having listened to Dr. Schmitz's able and helpful presentation of the subject of Carcinoma of the Uterine Cervix.

Dr. David W. Parker, Manchester: Dr. Wilkins's very complete and conclusive paper leaves very little room for discussion. The treatment of cancer, particularly cancer of the cervix uteri has always been one of the most discouraging and disappointing problems confronting the surgeon. With the constantly increasing radicalism of operation based on pathological investigation the percentage of so-called 5 year cases has increased progressively to a certain point. This point, attained by heroic surgical measures, with an immediate mortality even in the hands of super-experts of 10-25%, has been so low, except in the small group of very early cases, that for the average surgeon the justification for operation seems questionable.

Since the discovery of x-ray and radium there has been a rather constant and sometimes bitter controversy over the relative merits of surgery and radio therapy in the treatment of uterine cases. In the early years the statistics from radium treatment were conflicting and disappointing, but now, due to a more thorough knowledge of technique and milligram hour dosage, even the former advocates of surgery are forced to admit that the number of cures from radiotherapy at least closely approximates those from surgery and are not attended by any primary mortality.

Surgery means operation of the Wertheim type as nothing less radical is justifiable even in the earliest cases. This is shown conclusively by W. P. Healy of the Memorial Hospital, New York City. He states that "out of 836 cases of primary carcinoma 101 were classed as clinically early. However, the parametrial lymph glands removed with the uterus and adnexa showed metastasis in from 35 to 65% in these so-called early or favorable cases. Therefore, 1 or 2 out of every 3 cases in this group, if subjected to hysterectomy only, would probably have shown a recurrence within 1 or 2 years."

Those of you who have witnessed or performed a Wertheim operation know the technical difficulties, the shock, and post-operative suffering connected with it. Is it fair to subject our patients to surgery of this type if any other agent will offer approximately as good chances of relief or cure without pain, suffering, or disability? To me the answer is obvious.

I have reviewed the literature from the leading American and Continental cancer clinics since January 1927. The statistics are very interesting, and I wish time permitted me to give them to you in detail. I do wish to state however, that the average of 5-year cures following operation for 5 Continental clinics was 39.9%, and the average immediate mortality was 26%. Furthermore, in one European clinic (Wille, Paris), 75% of the 56% cures reported were on incipient cases, and only 25% on borderline.

These statistics are no better than the results obtained by radium at any of the best radium clinics and not as good as those at some.

Of particular interest to me was the decided trend toward radium treatment especially in the American cancer clinics. I. I. Kaplan (*Radiology* 1927, ix. 314) reviews treatment at many clinics, both American and Continental, and makes this significant statement, "Carcinoma of the cervix is not operated upon at Bellevue Hospital, New York City." Greenough (Cancer Symposium International Symposium for Cancer Control, Am. Soc. for the control of Cancer, Sept. 1926) states, "Cancer of the cervix is to a very great extent a local and regional disease, and infiltrates to glands and structures contiguous to the cervix early. The Wertheim operation, on account of anatomical relations of uterus, is attended by high mortality, frequent undersirable post-operative complications, and relative lack of success. Under these conditions the possibility of the application of radium to cases of cancer of the cervix offers many advantages. With sufficient dosage the destructive effect may destroy all of the disease and result in just as lasting a cure as can be obtained by operation."

Gaarenstroom (*Acta. Radiol.* 1926, vi, 456) believes that, "irradiation is justifiable for operable uterine cancer since its results are equal to those obtained by operation." The same opinions are also expressed by other leading international authorities on cancer.

I have had the privilege of observing the results of Dr. Wilkins's work in this line, and have been very forcibly impressed with the simplicity of the technique from the patient's standpoint, the freedom from disagreeable after-effects, and the long period of comfort and apparent health even in the advanced cases.

I no longer operate on cancer of the cervix.

Dr. W. A. Thompson, Manchester: I suppose I must take my courage in my hands with

all the men possibly against me. Why should a large insurance company place advertisements in the magazines and periodicals, informing the public that cancer is not a contagious disease? Why should the cancer research and the pathologists give out public utterance to the effect that cancer is not contagious? Do they know the cause of cancer? No! Do I know? I do not know whether it is intrinsic or extrinsic. There is a mass of information that it is extrinsic regardless of the old line pathology.

The heads of the pathological laboratories state positively to the profession and laity that cancer is not contagious, and are unsympathetic and combative to the young and older men who are trying to discover the bacterial or parasitic cause of cancer. By intuition, the doctors, nurses and the laity strongly object to handling the discharges from cancer patients. Many hospitals burn the dressings from cancerous patients for fear that it is contagious, bacterial or parasitic.

Now Erwin F. Smith of the United States Laboratory of Plant Pathology can produce cancer at will with the bacillus tumefaciens. He can produce any variety of cancer according to the depth and kind of tissue in the plant he is injecting.

Barker, who has investigated the condition all over the world, says that "he who comes in contact or swallows human or animal manure in civilized countries is subject to cancer." The Japanese rarely has cancer of the skin, as he takes daily hot baths.

The Hindu soldier in the British Army never has cancer of the gastro-intestinal tract for the reason that he never eats anything that does not come off the fire, whereas the English soldier eats uncooked vegetables grown in soil fertilized with human and animal manure. The German eats much uncooked food, and when he gets severe gastro-intestinal trouble, he commits the "Dutch", because experiences of his race lead him to the knowledge that he has cancer. In fact, any class of people who cook all their food and eat it at once are not subject to cancer.

The people of the tropics who eat only food that has a natural covering do not have cancer. The Eskimo, not surrounded by civilization or coming in contact with man is credited with being free from cancer.

In towns it has been shown that the town at the top of the water supply has very few cases of cancer, while the population below using the water and drainage for their garden, etc., had a high rate of cancer.

Now, isn't it proper to investigate thoroughly and continuously the parasitic cause of cancer? As it is, we are getting nowhere with the present line of research.

I agree as to the value of the radium and x-ray treatment, for it kills the parasites in the tissue, and I also agree with the early excision of cancerous areas to get rid of the parasitic breeding points.

Dr. Nuzum has isolated a micrococcus. I do not know whether it is the offending germ or not; but he has produced cancer in man and animals, and recovered the same micrococcus back again. This germ thrives in an acid medium; therefore, the frequency of cancer on the proximal side of the pylorus and the distal side of the ileocecal valve, whereas the small intestines being alkaline are very rarely the seat of cancer. In fact, everything about cancer is acid, even lactic acid is found within cancerous tissues elsewhere in the body.

I am not criticizing the previous papers or discussions, but I do wish to stir up a discussion as to the merit of large and responsible agencies telling the public that it can wallow in the discharges of sloughing cancer with impunity.

Dr. Morris Fishbein, Chicago: The remarks of the last speaker seem to me preposterous and for fear there may be a newspaper report, I think I ought to say a word about them.

He seems to have been reading the literature of Barker, who is associated with Arbuthnot Lane in the strange notion that cancer is caused by eating white bread and that one cannot get cancer if one eats whole wheat bread.

The figures that were given about the Eskimos and savages and Hindus do not represent first hand observations of the speaker or of the men he quotes; those who have lived long enough among savages know that cancer appears frequently among those savages who live to be old enough. Cancer is a disease of old age, and where you have people with life expectancy of 35 years, less cancer occurs than in civilized people.

I read Nuzum's paper but do not consider the work well established. That work was presented before the American College of Surgeons because Doctor Ochsner was interested in it. Nevertheless the work of Nuzum has not been corroborated by any other bacteriologist or any other pathologist in the United States.

The work of Glover was promoted by Father Moulinier who has promoted Glover and Glover's technic. That work was presented before the Catholic Hospital Congress, and expert pathologists and bacteriologists have failed repeatedly to confirm it.

The preponderance of evidence seems vastly against an infectious cause of cancer and in favor of hereditary relationships. Maude Slye's work is a beautiful demonstration. Although it might be possible to breed cancer out of the race, our present methods of mating make that impossible.

Human beings, as they live longer, will not

die of infectious diseases, and for that reason there is likely to be a definitely proportionate increase in cancer. There are less deaths from typhoid and other infectious diseases which used to carry people off in youth.

DR. W. A. THOMPSON, Manchester: Is Maude Slye a doctor?

DR. MORRIS FISHBEIN, Chicago: Yes, she is a doctor.

DR. JOHN F. HOLMES, Manchester: The point that Dr. Fishbein has raised is of interest, but we must remember that what he is talking about is theory, that the origin of cancer is unknown, that the various hypotheses that have been worked out are still unproven. In spite of investigation by scientists, covering hundreds of years, the problem of nutrition and growth has not been solved.

We know that great changes may be wrought in human structures in a short time by disturbed nutrition, that monstrosities may be produced in the breeding of animals by keeping from them certain vitamines and that in the process of a few generations they fail to produce their kind.

Our attention has just been called to the fact that cancer occurs more frequently in the uterus that has not produced, and the suggestion was made that it was probably (not) due to inflammatory process. Might we as well say that that uterus did not produce because it was not functioning properly and nutritionally—because of some disturbed growth of that organ—and because of that disturbed nutrition the uterus was rendered susceptible to infection; and, conclude that disturbed nutrition may be the contributing factor in the production of cancer?

Reference has been made to early malignancy. Dr. Schmitz contends that no case of carcinoma of the cervix can be diagnosed early from clinical symptoms. When leukorrhea, hemorrhage, and pain appear the patient has passed beyond the early stage. The early stage is discovered in the course of routine examination as a suspicious lesion or nodule and can be diagnosed early by microscopical examination. Hence we should be careful in the routine examination of patients, and make an attempt to discover what Dr. Schmitz describes as an early carcinoma. Moreover the suspicious cervix may be justifiably removed as a prophylactic against malignancy.

DR. W. T. CROSBY, Manchester: He speaks of cancer as being a disease of old age, and I always supposed it was, but I have run upon cases of cancer in people of less than 30.

DR. FISHBEIN: Cases of cancer occur in young people and even in children; but the disease does not occur preponderatingly in people of young age. Some work has been done by Burrows and others on the influence of vitamins on the growth of the cell, indicating an influence of nutrition on the cause of cancer, but the work is in an experimental stage.

We know that if cancer is diagnosed early and completely removed, the patient has an opportunity for longer life. That has been definitely established. The means by which the eradication shall be accomplished is another story. We know that complete eradication offers the best chance; the important point is how to get the patient to the doctor at a time when complete eradication is possible.

DR. CLARENCE E. BUTTERFIELD, Concord: The earliest case of cancer of the cervix I have seen was in a woman 20 years old.

I had an opportunity to examine the type of metastases following cancer of the cervix in which radium was used. The radium was used a year and a month ago, the usual three doses were given. This was an early case though there was some fixation of the cervix to the right broad ligament. In this case all appearance of the cancer disappeared, and the patient was entirely cured and remained cured for seven or eight months. Then there developed a mass in the abdomen, and she became a terminal case. Yesterday I opened the abdomen and made a casual examination of the metastases which seemed interesting. First there was no involvement of the uterus though following the cancer treatment there was a partial atresia of the cervix and a good deal of purulent discharge from the boggy uterus. The uterus was smooth and contained no evidence of cancer. The broad ligaments were involved with the right ovary. The mesenteric glands were involved from the promontory of the sacrum to the diaphragm. The intestine was nowhere involved. The right lobe of the liver had no involvement, but the left lobe had a growth on its under surface. There was no involvement of the duodenum or of the gallbladder; some involvement around the cardiac end of the stomach, no involvement of the kidneys, the spleen and the pancreas were not involved at all.

The patient had no symptoms during her illness except very severe backache and pain in the sciatic nerves. She died from exhaustion. She was also an advanced case of pulmonary tuberculosis but during the last five or six months of her life she had no expectoration, and although the examination of the chest showed marked involvement, there was no secretion from the lungs and no sputum.

The things that I would like to add to the discussion are these: We should see to it that no portion of the cervix is removed without a careful microscopic examination of that portion, especially when lacerations of the cervix are being repaired. Second, we should have a

careful microscopic examination of the curettings in every case where we deem it necessary to curette.

Dr. George C. Wilkins, Manchester (closing): I take this opportunity to express my appreciation of the paper of Dr. Schmitz. I enjoyed it very much indeed, as you all did. He covered the ground of diagnosis and prognosis better than I have ever heard it covered before. He reaffirmed the rôle played by chronic irritations as the cause of cancer; and we see this in the cervix, in the breast, and in the skin.

I was also glad to hear what he had to say about biopsies in the doubtful cases, that is, where there is a questionable ulceration of the cervix, taking a specimen and having it examined. Furthermore, this should be carried out to a greater extent in the women who have irregular bleeding when the cervix is smooth, giving that patient a slight anesthetic, curetting the uterus and having the specimens examined. This should be done in every case, and there is no reason for a woman going along with irregular bleeding and the physician guessing at the cause. The exact cause of the bleeding should be discovered. Many of them are due not to cancer, but to hyperplastic endometritis.

Unfortunately it is very seldom that we see the early cases, and I mean early by the classification of the American College of Surgeons. That was shown in the figures of Dr. Schmitz and in the ones that I have shown.

Fortunately in the treatment of cancer of the cervix the cervical tissue, the normal tissue, is very resistant to radiation, and that is the reason we can give such tremendous doses of radium in that area, much larger than we can give in any other region of the body, without injury to the normal tissues.

The cases I have mentioned in my paper have been followed up, not with biopsies, but at intervals of three months, six months and a year, and then at six months intervals after that.

If a patient has an early carcinoma of the cervix; a small ulceration with no parametrial involvement, none of us can tell by bimanual examination, by operative examination or by any other way, whether metastases have developed in the pelvis. It is impossible to determine that point. Therefore when that uterus with the early carcinoma of the cervix is operated upon and removed we have no assurance that that pelvis is free from cancer when we leave it. Radium placed in the uterine canal in a similar case will radiate the *cervix* and will radiate a distance of five centimeters and over away from the cervix, the amount of radiation diminishing according to the square of the distance. The parametrial tissue and the tissue adjacent to the cervix is radiated to an extent that will kill the cancer cells in it. The knife cuts at one point, and the remaining cut surface may have cancer cells, imbedded. I say this on account of the remarks in the discussion, but also add that radium treatment in cancer of the cervix needs no defense.

Dr. F. N. Brown, Providence: I do not know that I can say anything to add to the pleasure of the occasion except to say I am glad to come back and see the faces of so many I have known before.

I was very much pleased with the papers offered this afternoon and I have but few suggestions to offer. Having been a resident of India and knowing that they do have cancer and knowing that they cook food with the excreta of animals (for fuel) that fell off the wall, and the food is cooked over this fuel or partially cooked and eaten. Furthermore, they eat raw vegetables and bamboo shoots and everything else. I did not intend to say this because the matter has been so well testified to by Dr. Fishbein that anything I would add would be superfluous. However, I am glad to meet the men of New Hampshire and bring a message of cheer from Rhode Island to the New Hampshire Medical Society.

MISCELLANY

A JOINT MEETING OF THE CHESHIRE COUNTY AND HILLSBOROUGH COUNTY MEDICAL ASSOCIATIONS

A joint meeting of the Cheshire County and Hillsborough County Medical Associations was held Tuesday, October the 23rd, 1928 at Peterborough, N. H., beginning at 10 A. M. with a clinic at the Peterborough Hospital conducted by Dr. W. R. MacAusland and Dr. W. E. Preble of Boston, Mass. Several interesting operative orthopedic cases were presented. At 1 P. M. luncheon was served at Sawyer's Tavern to the members and the Ladies' Auxiliary jointly. About 100 were present. At 2 P. M. in the Peterborough Historical Building the following program was given:

Remarks by J. J. Cobb, M.D., Berlin, N. H., President of the N. H. Medical Society.

Symposium on Arthritis:

Surgical Aspects. Illustrated by moving pictures. W. R. MacAusland, M.D., Boston, Mass.

Medical Aspects. W. E. Preble, M.D., Boston, Mass.

Radiological Aspects. T. F. Rock, M.D., Nashua, N. H.

Discussion by E. A. Jones, M.D., Manchester, N. H.; R. W. Holmes, M.D., Keene, N. H.; H. W. N. Bennett, M.D., Manchester, N. H.; R. H. Marcotte, M.D., Nashua, N. H.

General discussion.

This scientific meeting was of unusual merit and created much interest. During the day the Ladies' Auxiliary was entertained by a ladies' committee from Peterborough. They visited the points of interest during the forenoon including the McDowall Colony and the Estate of Mrs. Wm. Schofield. In the afternoon a social meeting was held. Much credit is due the committee of arrangements for the successful

arrangements and a most interesting and profitable meeting.

In the course of the business meeting Dr. David W. Parker was elected a member of the Committee on Medical Defense from Hillsborough County. The Manchester Medical Society was delegated a committee of arrangements for the State Medical Society which will be held in Manchester next May, the president of the Manchester Medical Society being delegated chairman.

The officers of the Cheshire County Medical Society are:

President, E. M. Tighe, M.D., Keene, N. H.
Vice-president, A. Weston, M.D., Keene, N. H.
Secretary, A. A. Pratte, M.D., Keene, N. H.

The officers of the Hillsborough County Medical Society are:

President, A. W. Petit, M.D., Nashua, N. H.
Vice-president, W. A. Thompson, M.D., Manchester, N. H.
Secretary, D. G. Smith, M.D., Nashua, N. H.

The committee on arrangements were:
F. B. Foster, M.D., Peterborough, N. H.
L. F. Richards, M.D., Dublin, N. H.
A. A. Pratte, M.D., Keene, N. H.
D. G. Smith, M.D., Nashua, N. H.

THE ANNUAL MEETING OF THE COOS COUNTY MEDICAL SOCIETY

The 26th annual meeting of the Coos County Medical Society was held in Berlin, N. H., October the 18th, 1928, at the Y. M. C. A., Dr. H. E. Wilkinson presiding.

The following officers were elected for the ensuing year:

President, Henry W. Wiggin, M.D.
Vice-President, John M. Blodgett, M.D.
Secretary-Treasurer, George R. Cusson, M.D.
Censor 3 years, Wm. H. Leith, M.D.
Delegates, Geo. R. Cusson, M.D., T. C. Pulsifer, M.D.
Alternates, W. R. Schilhammer, M.D., Geo. H. Morrison, M.D.

Luncheon was served at 1:15 P. M. under the auspices of the Auxiliary. At 2:30 P. M. the members of the two societies convened in joint session and enjoyed a very interesting and unusual program. The following addresses were given:

The Doctor's Wife: Mrs. Grace P. Amsden, Concord, N. H., ex-president of the N. H. Ladies' Auxiliary.

Address: Medical Ethics: John C. Cobb, M.D., Berlin, N. H., President, N. H. Medical Society.

The Relation of the Physician to the Public: Hon. Thomas L. Marble, Member Supreme Court of N. H.

Following the literary program the Auxiliary served tea and a social hour was enjoyed by all present.

Courtesy of Homer H. Marks, M.D., Secretary Coos County Medical Society.

MEETING OF THE MANCHESTER MEDICAL SOCIETY

The first of the regular yearly meetings of the Manchester Medical Society was held at the Derryfield Club, Manchester, N. H., Tuesday, October the 16th, 1928. A dinner preceded the meeting. Dr. Clarence Dunbar of Manchester presided. Following the routine business Dr. Dunbar gave the president's address, selecting for his subject "Economics in Medicine". He mentioned the efforts being made by the American Medical Association in an attempt to adjust medical practice to the needs of the patients and spoke of other economic problems involved in the practice of medicine. Dr. Dunbar was followed by Mr. James F. Ballard, librarian of the Boston Medical Library, who called attention to the value of an up-to-date reference Medical Library, quoting from speeches of Oliver Wendell Holmes, Sir Wm. Osler, Dr. George Vincent, and Dr. Harvey Cushing. He commented favorably upon the library facilities in Manchester and offered valuable suggestions toward the development of the Medical Department in the Library. Previous to the meeting Mr. Ballard had made a survey of the Medical Department of the Library and he volunteered to send written recommendations covering its needs. He also suggested available affiliation with the Boston Medical Library. At the conclusion of the meeting the Library committee of the Medical Association consisting of Dr. Clarence Dunbar, Dr. Harris Powers (president and secretary ex-officio), Dr. W. H. N. Bennett and Dr. John F. Holmes, who were instructed to carry out Mr. Ballard's suggestions. It is hoped by the Medical Society that through the assistance of Mr. Ballard of the Boston Medical Library co-öperating with Miss Winchell of the Carpenter Memorial Library of Manchester that Manchester will soon have an up-to-date Medical reference Library affiliated with the Boston Medical Library.

MEETING OF THE CHESHIRE COUNTY MEDICAL SOCIETY

The last regular meeting of the Cheshire County Medical Society was held at the Elliot Community Hospital, Keene, N. H., at 10:30 A. M. October the 4th, 1928, and was well attended. The Society unanimously voted to request the Keene City Council to grant permits to druggists to dispense liquor on physicians' prescriptions. Dr. Osmon H. Hubbard of Keene was elected a permanent member from the Cheshire County on the State Committee for Medical Defense. Dr. D. E. Sullivan of Concord, Secretary of the New Hampshire Medical Society, spoke briefly, urging co-öperation in perfecting the plan of Medical Defense. Dr. Joseph Cobb of Berlin, and Dr. Harry O. Smith of Hudson, President and vice-president of the Society, spoke on the Welfare of the Medical Profession, particularly urging the support of the Ladies' Auxiliary. Dr. Deering Smith of Nashua, Secretary of the Hillsborough County Medical Society, extended an invitation to the Cheshire County Medical Society to join the Hillsborough County Medical Society to a meeting at Peterborough October the 23rd. This invitation was accepted, Hillsborough County Medical Society being assured of Cheshire County Medical Society's co-öperation. Dr. J. J. Brosnahan of Keene presented a good paper on "Convulsions in Infants" and Dr. Roy Wheeler of Boston gave a splendid talk on "Diabetes." This talk was considered to be of exceptional merit.

Courtesy of Dr. A. A. Pratte, Secretary Cheshire County Medical Society.

MEETING OF THE ROCHESTER COUNTY MEDICAL SOCIETY

At the annual meeting of the Rochester County Medical Society held October the first, 1928, at Derry, N. H., the following officers were elected:

President, S. J. Cogswell, M.D., Derry, N. H.

Vice-president, L. R. Hazzard, M.D., Portsmouth, N. H.

Secretary, J. S. W. Knowlton, M.D., Exeter, N. H.

Treasurer, C. W. Colby, M.D., Exeter, N. H.

Delegates, S. Ladd, M.D., Portsmouth, N. H.; E. Eastman, M.D., Portsmouth, N. H.; R. H. Barker, M.D., Derry, N. H.

Alternates, H. B. Carpenter, M.D., Portsmouth, N. H.; W. R. Sanders, M.D., Derry, N. H.; D. C. McLachlan, M.D., Greenland, N. H.

Censors, A. A. Landman, M.D., Plaistow, N. H.; O. B. Gilbert, M.D., Exeter, N. H.; C. W. Hannaford, M.D., Portsmouth, N. H.

Member of Committee of Medical Defense of New Hampshire Medical Society, T. W. Luce, M.D., Portsmouth, N. H.

Necrologist, W. P. Clare, M.D., Portsmouth, N. H.

MEETING OF THE NEW HAMPSHIRE SURGICAL CLUB

The 31st annual meeting of the New Hampshire Surgical Club was held at Gray's Inn, Jackson, N. H., September the 24th, 1928. The morning program began at 10 A. M. with a Round Table Conference at which two subjects were presented, the first "Preoperative Treatment" was prepared by Dr. James W. Jameson of Concord, N. H. In the absence of Dr. Jameson this paper was read by Dr. James B. Woodman of Franklin. The second paper—"Postoperative Treatment"—was presented by Dr. David W. Parker of Manchester. The discussion was opened by Dr. Clifton Abbott of Laconia, N. H., followed by Dr. James B. Woodman, Franklin, N. H.; Dr. Emery Fitch, Claremont, N. H.; Dr. Thomas Luce, Portsmouth, N. H.; Dr. J. C. Huckins, Ashland, N. H.; Dr. Joseph Cobb and Dr. Homer Marks of Berlin, N. H. Dr. John F. Holmes of Manchester, N. H., and Dr. Frank Lahey of Boston, Mass. The papers were splendidly prepared and well presented. They will be published in the NEW ENGLAND JOURNAL OF MEDICINE. In the discussion many interesting points and personal experiences were brought out. Dr. Lahey called attention to the use of Carbon Dioxide gas inhalations in the control of hiccoughs. He said that he believed that postoperative distention oftentimes is due to kinking of the intestines. In persistent distention without relief he recommended jejunostomy done at the left costal margin under local anesthesia. When the question of advisability of transfusion arises Dr. Lahey said that he had found that the general tendency is to delay transfusion too long. He said the time to do a transfusion is when you first begin to think about it. Dr. John F. Holmes, of Manchester, N. H., reported use of Pituitrin in postoperative shock and particularly in postoperative distention, favorable results and no unfavorable symptoms having been noted in the use of as much as 4 and 5 C.C. given every hour until results were obtained, as many as 37 C.C. having been given in 12 hours and 67 C.C. having been given in 24 hours with relief of extreme abdominal distention and ultimate recovery of the patient.

Thirty members were present at the morning meeting.

The afternoon program began with the annual business meeting. Reading of the records of previous meetings was omitted. A nominating committee consisting of Dr. Thomas Luce, Dr. Robert Graves, Dr. Elmer H. Carlton was appointed. They subsequently brought in the following list of officers for the ensuing year:

President, Daniel C. Norton, M.D.

Vice-President, J. F. Gile, M.D.

Secretary and Treasurer, J. F. Holmes, M.D.

Executive committee: President and Secretary-Treasurer, ex-officio; Carlton R. Metcalf, M.D., Timothy Rock, M.D., A. T. Downing, M.D.

The afternoon scientific program was then presented as follows:

"Surgical Problems" by Dr. Frank Lahey, Boston, Mass. Dr. Lahey covered a variety of important surgical problems in an interesting and masterful way. He touched upon spinal anesthesia, gastric and duodenal ulcer, biliary surgery, diverticulum of the esophagus, etc. Dr. Lahey described the physiology, pathology, and treatment of these conditions, setting forth many new and in some instances original ideas, and offered helpful suggestions in the diagnosis, treatment, and operative procedure in many different aspects of surgery. Upon his departure which was necessarily at the conclusion of his talk a rising vote of thanks was given him, and a short recess was declared.

When the meeting was resumed "Gunshot Wounds of the Abdomen with a report of a case" was presented by Dr. E. M. Miller of Woodsville, N. H. Mr. Fred Foster, traffic officer of Woodsville, a patient upon whom Dr. Miller successfully operated for multiple bullet wounds of the intestine following a gun battle at the County Prison, was there and told his very extraordinary story from the patient's standpoint. (It is interesting to note that Mr. Foster's bravery has been recognized by the N. H. legislature. He had shot the convict after being almost fatally wounded himself.) This paper was discussed by Drs. Fred P. Claggett, of Newport, N. H., and Fred E. Spear of Woodsville, N. H.

A paper under the title of "Staphylococcus Septicemia with Metastatic Osteomyelitis" was read by Dr. John Boardman of Hanover, N. H. It had been prepared jointly by Dr. Boardman and Dr. John P. Bowler of Hanover, N. H. The case reported in this paper was that of a young person with septicemia followed by metastatic osteomyelitis in which immune transfusions were used with gratifying results and recovery of the patient. This paper was discussed by Dr. J. F. Gile, Hanover, N. H., and Dr. A. T. Downing, Littleton, N. H.

"Industrial Accident Surgery" was presented by Dr. Murray A. Towle, Manchester, N. H. This paper covered the field of Industrial Surgery including the subject of hernia, its traumatic and congenital aspect. The discussion was opened by Dr. Phillip McQuestion, Nashua, N. H., and Dr. John C. Lawlor, Dover, N. H. A general discussion followed in which personal experiences and opinions were freely set forth.

At 6:30 P. M. members and guests assembled in the banquet hall of the Inn, where the annual banquet took place, Dr. A. T. Downing ably acting as toastmaster. The after-dinner speakers were: Retiring president, Dr. Elmer M. Miller of Woodsville, N. H., who spoke of the activities of the Club, urging adherence to the progressive attitude of the past. He commended the presence of ladies at the banquet and told a fascinating legend of the creation of woman. Dr. Daniel C. Norton of Manchester discussed the "Savage as a Scientist" in an interesting manner, showing that the savage even though uneducated knows much of medical lore. Dr. Joseph C. J. Cobb of Berlin, President of the N. H. State Medical Society, spoke on the ethical relations among physicians, urging friendliness, good fellowship and confidence. The last speaker was the Rev. Donald Frazer of Rochester, N. H., who entertained with a combination of religious, medical, and Scotch humor. Music, instrumental and vocal, was interspersed during the banquet. The evening was concluded with cards and general dancing.

During the meeting several took occasion to visit Mt. Washington, only 12 miles distant from the Inn. Many ascended to the top. The day was unusually clear and the mountain scenery was much appreciated as was also the unusual courtesy extended by the management of Grey's Inn.

The meeting was well attended and much enjoyed by all.

JOHN F. HOLMES, M.D.,
Secretary-treasurer, N. H. Surgical Club.

NEWS ITEMS FROM KEENE, N. H.

Dr. H. K. Faulkner of Keene, N. H., has fully recovered from his recent operation. Dr. and Mrs. W. H. Lacey of Keene, N. H., have left for a two months trip to Italy. Dr. and Mrs. Edward E. Tracy of Keene, N. H., have gone to St. Louis, Missouri. They will return about Dec. 1st, 1928.

Courtesy of A. A. Pratte, M.D., Secretary Cheshire County Medical Society.

BEYOND THEIR DEPTH

The importance of the social sciences for the problem of crime and delinquency is beginning to be understood, however imperfectly, by those who have to deal officially with it. Prison administration, parole, probation, police work, court procedures are being recognized more and more as social as well as legal functions, requiring for their discharge specialists with knowledge of the psychology of human behavior. That these are not fields for the amateur is evident from the following answers in the examination papers of applicants for a recent opening in the psychiatric department of a penal institution in the east:

Feeblemindedness is a partial loss of memory, insanity a total loss.

Feeblemindedness is either caused through the time of birth, or a fall, or being struck by a car. Insanity is either caused by jealousy, upset brain, overexcitement or scare.

The feebleminded lack gray matter, while the insane have too much very often, as is seen in fish-eating countries.

A social history is made to keep an account of social activities.

This innocence of all knowledge concerning subject matter vital to the job is no more deplorable than the judgment shown by the authorities in countenancing the type of applicants that appeared for the examination, not one of whom qualified for the position. Dimly aware of the educational requirements of such work, one city government now calls for high school training in all of its probation officers, though little conception of the character of individual needed for probation work is manifested by the civil service examiners charged with the procurement of personnel.

There is another aspect of the matter that concerns the mental hygienist especially. If candidates for a social-work position know so little about the meaning of mental disease and defect, how much does the public know? Must we not redouble our educational efforts and bring the mental-hygiene movement closer to the average man? And must we not pay particular attention to definitions and terms to avoid misunderstanding and confusion regarding a complicated subject?—*Mental Hygiene Bulletin.*

THE TOKYO HOSPITAL DRIVE

A general committee is being formed to conduct a drive for $2,656,500 for St. Luke's International Hospital, Toyko. The committee includes prominent men in this country in co-öperation with the American Executive Committee for the Tokyo Hospital under the chairmanship of former Attorney General Wickersham. Thomas W. Lamont is treasurer.

Local representatives on the Committee are Dr. A. Lawrence Lowell, Dr. David L. Edsall and Mr. Charles E. Mason.

Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 14421

GENERAL GLANDULAR ENLARGEMENT LASTING THIRTY YEARS OR MORE

MEDICAL DEPARTMENT

An American stationary fireman forty-three years old entered September 12 through the Emergency Ward for study of upper abdominal pain and enlarged glands. He was semistuporous and very irritable.

Ever since he was a small child he had had enlarged glands in his neck and axillae. They did not change from childhood until after he was grown up. Then at times they increased, occasionally reaching the size of a large walnut and remaining so for a few days, then going down again and not troubling him for months. He had been in fairly good health until September 1, although for several years he had had epigastric distress and eructations of gas after heavy meals. Seven months before admission the inguinal glands became enlarged after some hard lifting. These glands at first were tender for a day or two. The glands in the neck and axillae had never been tender. In May his feet and ankles began to swell during the day, reaching two or three times their normal size after he had been on his feet for a long time but returning to normal overnight. At this time there was more marked enlargement of the inguinal glands. Under treatment by a physician the edema disappeared. He had urinated once or twice a night since that time. The night of September 1 after eating a few pieces of chocolate candy he was suddenly seized with severe colicky epigastric pain which lasted for over an hour and gradually turned into a gnawing dull ache which kept him awake all night and for the five following nights. After this attack he ate very little food because it seemed to cause gas and increase the discomfort. Soda gave no relief. The pain came in waves. When he had attacks of sharp pain it seemed to run around to the lumbosacral region. Four weeks before admission he had two or three attacks of shooting and darting pain all through his legs.

His bowels had always been constipated. He had slight dyspnea and palpitation on exertion. For a year he had occasionally urinated at night. There was some question as to girdle and shooting pains. Ten years before admission he weighed 215 pounds, his best weight; a year before admission 180 pounds. He thought he had lost some weight in the past six months.

His mother, who died of cancer of the breast, had some "heart failure". His four children had enlarged glands, not so marked as his own.

Clinical examination showed a man with obvious loss of weight and marked pallor, coöperative but drowsy. Moderate pyorrhea. Nasal septum deviated to the left. Left submaxillary and supraclavicular and right cervical glands enlarged, measuring one-half to three centimeters. In both axillae and groins were glands the size of a peach stone, the inguinals firm, all the others moderately soft. Marked flaring of the lower costal margins. Harrison's groove. Diaphragmatic excursion limited. Inspiratory wheeze on the left, front and back. Apex impulse of the heart not seen or felt. No enlargement to percussion except slight increase in supracardiac dullness to the left. (Total 6.5 centimeters.) Pulses and artery walls normal. Blood pressure 115/70 to 95/65. Abdomen slightly distended, with tympany in the center and shifting dullness in the flanks. No fluid wave made out. Veins prominent over the upper abdomen. Liver dullness increased downward to five centimeters below the costal margin. Edge not felt. In the left upper quadrant a mass, probably the spleen, descended five centimeters below the costal margin on inspiration. Right pupil greater than left; both regular and reacted normally. Fundi: discs slightly pale, no exudate or hemorrhage. Genitals, extremities and reflexes normal.

Urine: 30 to 55 ounces, red at three of five examinations, specific gravity 1.020 to 1.030, a slight trace of albumin once, bile twice, rare to occasional leukocytes at three of five sediment examinations. Blood: 3,600 to 8,400 leukocytes, 61 to 100 per cent polymorphonuclears, hemoglobin 75 to 45 per cent, reds 4,500,000 to 3,250,000, moderate to marked achromia, moderate to slight poikilocytosis in all of five smears, anisocytosis in the last two, platelets always reduced. In one smear several of the very pale red cells showed rings in centers made up of very small granules, possibly artefacts or Cabot's rings. Two Hinton tests negative. Nonprotein nitrogen 27 milligrams. Icteric index September 13 3, October 5 40, October 7 20. Stools negative.

Temperature 96.8° by mouth to 103°. Pulse 80 to 140. Respirations 20 to 44.

X-ray showed the hilus shadows markedly enlarged in size. There was a lobulated mass in this region. The interlobar septum was visible on the right. There was fine mottled dullness throughout both lung fields. The changes were most marked in the upper lobe. The pelvis and lumbosocral spine showed no abnormalities. Reexamination October 9 showed no definite change since the previous observation.

September 17 a gland was removed from the

neck for examination. September 19 X-ray treatment was begun.

The patient had some pain. From September 15 to 19 he had no movement of the bowels. The temperature was 101° to 103°. There were medium râles at both bases with diminished breath and voice sounds and with a questionable friction rub below the angle of the right scapula. The patient grew rapidly weaker, thinner and paler and dozed much of the time. The glands diminished slightly in size. The mass in the right upper quadrant grew much smaller. He had no appetite and took only milk and a few crackers. His mouth was dry, his tongue shiny and stiff. October 6 there were numerous fine to medium râles in both backs and a few coarse crackles at the left base. Fluid persisted in the abdomen. The glands diminished markedly in size. October 6 the spleen could not be felt. The leukocyte count was 6,000. The blood contained no lymphocytes. He continued to fail rapidly. Râles increased in both sides of the chest, more marked on the right. From October 4 to 10 the temperature was never below 100.7° rectal or above 102°. The pulse was 100 to 140, the respiratory rate 23 to 40. There was moderate pitting edema of the feet. October 10 he died.

Discussion

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

1. This is a very unusual history, if true. One sees plenty of people who have enlarged glands, but not for many years like this with retention of very fair health. I do not remember any case exactly like this and I can make no special conclusion from that statement. They do not sound like leukemia or Hodgkin's or syphilis or tuberculosis, the ordinary four causes of enlarged glands.

2. The pain was peristaltic presumably.

3. I am very much in the dark. Epigastric pain of course is ordinarily due to gall-stones or peptic ulcer or simple things like constipation, but the rest of the symptoms do not back up any of these causes and so far I have nothing of importance to say.

NOTES ON THE PHYSICAL EXAMINATION

1. The pain in his legs made them think of the lightning pains of tabes. Tabes is a cause, though not a common cause, of epigastric pain. But they do not seem to be clear on that point in his history.

2. Three centimeters diameter means a sizable gland. Half a centimeter is a size that half the normal people have in neck, axillae and groin, but three centimeters is something. So far the enlarged glands are the essential lesion that we have.

3. There is ascites. The prominent veins make us wonder whether cirrhosis of the liver or some other less common form of portal stasis is the cause of this ascites.

So far we have enlarged glands, big spleen, fluid in the abdomen, enlarged veins in the epigastrium, perhaps enlarged liver.

4. I have never seen 100 per cent of polynuclears in any blood. I do not believe it. But of course they get up into the nineties quite often. This blood shows secondary anemia with polynuclear leucocytosis; it is not characteristic of any blood disease; it is consistent with Hodgkin's, consistent with a syphilis or with a cirrhosis of the liver.

5. Only one of the X-ray plates, the earliest, is a good plate according to my standards. I suppose as he got sicker it was harder to take them. It certainly looks as if the masses around the hilus of the lung were larger than they ought to be and as if there was more than normal spotting throughout both lungs. There are no sizable nodules such as we get in metastatic malignant disease. I do not see much difference between September 12 and October 8, but one cannot be sure about the shadows because everything is so dim.

We have here, then, something that can perfectly well be Hodgkin's (lymphoma), but we are not forced to it in any way. It is not yet characteristic or clear.

6. Presumably when the gland was taken out they found out what the diagnosis was, but they do not tell us. When we have a superficial gland there is no use waiting; we can have an antemortem examination.

7. They no longer have any doubt about the fluid in the abdomen on October 6. They seemed a little doubtful about it before.

8. They are very definite in the statement "no lymphocytes". I wish we had the slide.

A Student: Wouldn't that be consistent with X-ray treatment?

Dr. Cabot: I have never seen a blood that contained nothing but polynuclears. X-ray treatment in blood diseases, especially leukemia, hits abnormal cells like the myelocyte very specifically, but in a case like this I do not know of any specific effects of X-ray treatment on the blood.

DIFFERENTIAL DIAGNOSIS

We have to find the cause of death of a man who was sick in this hospital for a month, who had been known to have enlarged glands for a very long time, but who had been acutely sick for only twelve days before he came here,—an illness of about forty days in all. The essential facts are (a) enlarged glands which go down under observation during the course of a fever; (b) a big spleen which also went down presumably for the same reason, whatever that is; (c) continuous ascites which did not change; (d) masses judged by the radiologist to be abnormal

at the roots of the lungs; and (e) a secondary anemia. Now what can do that?

I do not know any variety of *sepsis* that can run that length of time with no acute lesion showing and no emboli or heart lesion to make us think it localized there. I speak of sepsis because it is the commonest cause of enlarged glands. I do not think it probable in this case. If we consider his enlarged glands, spleen and liver and ascites, sepsis will not account for it. Sepsis comes in, if at all, as a terminal complication.

Can we say *syphilis*? I think not. The glands alone and the spleen could be due to syphilis, but the course is not like any syphilis that I know of. People do not die of syphilis unless it hits some particular organ in a way that we have no evidence of here. The same can be said of *tuberculosis*.

I see no plausible diagnosis except malignant lymphoma or Hodgkin's disease: I mean a neoplasm starting in the lymph tissues in various parts of the body. Just where it is in the abdomen I do not know. We can easily suppose that it is in the root of the mesentery so as to impede circulation and produce ascites. It might be in the liver too, but as to that we can only speculate. Apparently it is in the root glands of the lungs. Now lymphoma has no characteristic blood. It has often been said that it has, but anybody who studies it will conclude that there is no characteristic blood of lymphoma. It often produces long periods of fever such as we have here, and in many cases we find an infection post mortem and think the fever due to that. The high percentage of polynuclears we expect in sepsis. Still "100 per cent" makes us think of something more than infection. I can make no other diagnosis than lymphoma or lymphoblastoma (= Hodgkin's, malignant lymphoma, etc.)

A STUDENT: Do you think the glands in childhood were due to the Hodgkin's?

DR. CABOT: I do not know what else to think. But there are quite a number of cases on record in which glands have remained stationary and symptomless for a long time and then have begun to produce symptoms.

A STUDENT: Is there any record of basal metabolism?

DR. CABOT: There is no record.

A STUDENT: How about his abdominal masses?

DR. CABOT: The pain which he had in the beginning sounded peristaltic. Of course if he had lymphoma it could perfectly well be in the intestine. It is one of the common places for lymphoma. Or even if it is outside the gut it can interfere enough to account for pain. If the pain is not from lymphomatous masses in relation to the intestine, I do not know what it is.

A STUDENT: Could this be aleukemic leukemia?

DR. CABOT: I should have said something about the bone marrow. We do not feel comfortable about making a diagnosis of neoplastic bone marrow involvement when we have 100 per cent polynuclears. That he should be putting out polynuclears with a marked involvement of the bone marrow would be very unusual. "Aleukemic leukemia" means myeloblastoma or lymphoblastoma of the marrow without any circulatory metastasis. I like those positive terms better than the negative one. I would rather state in our name for the disease the thing we know, which is the marrow lesions on the basis of their histology. I have given the chief points against that, namely the presence of marrow cells and the exclusion of everything else in the blood.

A STUDENT: Do you attach any importance to the fact that his children have enlarged glands?

DR. CABOT: I do not know what importance to attach to it. Lymphoma is not hereditary so far as I know.

A STUDENT: Can Gaucher's disease be ruled out?

DR. CABOT: No, I do not know that it can. But the majority of cases have a much enlarged spleen.

A STUDENT: How about gastric carcinoma, from the history of pain and the secondary anemia?

DR. CABOT: I think that is rather little to support that diagnosis. We should have more evidence before thinking of gastric cancer, especially as he has so much else that can cause his secondary anemia.

A STUDENT: Isn't the duration rather long for Hodgkin's?

DR. CABOT: I don't think there is any duration that can be stated for Hodgkin's. I have known very long cases. I have known short ones.

A STUDENT: What is the significance of the red-colored urine?

DR. CABOT: Nothing, I think; high-colored, concentrated urine. It shows a gravity of 1.030 once. "Red" means high-colored. People use colors very loosely in talking about patients, as "green sickness" for chlorosis, that sickness which is never green. I think this is simply an exaggeration.

A STUDENT: What were the lung symptoms at the end?

DR. CABOT: "The râles increased in both sides of the chest, more so on the right". The respiratory rate rose. That is a good point to bring out. There may well be a bronchopneumonia. We do not need to suppose it, but it is quite possible.

A STUDENT: Could sarcoma do this?

DR. CABOT: You mean lymphosarcoma? You get out of my depth there. If you mean that it starts from the lymph glands themselves and especially from the immature cells, it seems to me lymphoblastoma is the better name.

A STUDENT: How about the shooting pain in the leg?

DR. CABOT: I don't know. I don't think that can be due to this disease.

A STUDENT: How do you account for glands decreasing in size?

DR. CABOT: X-ray treatment accounts for it. Perhaps also he had some terminal infection. Any terminal infection that we can name tends to make the glands and spleen decrease in size.

A STUDENT: I was referring to the glands diminishing in his youth.

DR. CABOT: I do not think I have anything to say about that.

A STUDENT: What was the significance of the shiny stiff tongue?

DR. CABOT: Fever, that is all.

A STUDENT: Do not the glands in Hodgkin's disease recede at times?

DR. CABOT: Yes, they do, especially under treatment.

A STUDENT: How do you explain the tenderness of the inguinal glands?

DR. CABOT: I do not explain it.

A STUDENT: Doesn't the terminal blood picture of Hodgkin's disease reach 100 per cent polynuclears?

DR. CABOT: I have never known it before.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Lymphoblastoma, generalized.

DR. RICHARD C. CABOT'S DIAGNOSIS

Lymphoblastoma, Hodgkin's disease.
Terminal infection (bronchopneumonia?)

ANATOMIC DIAGNOSES

Lymphoblastoma (Hodgkin's type).
Bronchopneumonia.

DR. TRACY B. MALLORY: The anatomical findings were those of a typical Hodgkin's disease. The lymph nodes throughout the body were enlarged, to notable size in the inguinal region and also in the root of the mesentery. There were tumor nodules scattered throughout the liver. The spleen was the typical "porphyry" spleen of this disease. There were innumerable nodules scattered throughout the lungs, some of them miliary in size, others reaching nearly a centimeter in diameter, also Hodgkin's disease, although in gross very closely simulating tuberculosis. The bone marrow was entirely negative.

There was a pneumonia in the right base, evidently present for a considerable time, since already a moderate degree of organization had occurred. Organization is of course a possible outcome of any pneumonia which fails to resolve, and although relatively uncommon we have seen several cases recently. The other organs were essentially negative except for acute tubular degeneration in the kidneys.

A STUDENT: Was there any obstruction in the vena cava?

DR. MALLORY: I think perhaps, from the external pressure of these nodes.

A STUDENT: Was the lung parenchyma involved?

DR. MALLORY: To a considerable extent. That is not very common, but it is quite possible. I have seen one case where there was excessive pulmonary involvement. The patient had been in a tuberculosis sanatorium for three years. He had also a vertebral lesion which was diagnosed by X-ray as Pott's disease. The X-ray pictures of the two conditions may be identical I believe.

A STUDENT: Did you diagnose this disease from the biopsy material?

DR. MALLORY: Yes; it was a very typical Hodgkin's disease.

A STUDENT: What other general disease can you diagnose from histologic sections of lymph nodes?

DR. MALLORY: Generalized tuberculosis of the lymph nodes. That is about all that I feel very sure of.

A STUDENT: Do you use the term "aleukemic leukemia"?

DR. MALLORY: Not yet.

DR. CABOT: In relation to this term, it doesn't make any great difference what we call things, but I think it is sensible to name a disease by what is there rather than by what is not there,—non-leukemic leukemia,—whereas we have something definite to say, namely, bone marrow growth—myeloblastoma.

CASE 14422

POSSIBILITIES IN THE TREATMENT OF A CASE OF ADVANCED PULMONARY TUBERCULOSIS

MEDICAL DEPARTMENT

A married American woman twenty-four years of age with a negative family history entered the hospital on May 22 complaining of cough and pain in the left chest.

In April, one year before entrance, she had her appendix removed. Following the operation she began to have a slight cough, at first non-productive, but later gradually progressive in severity and associated with the raising of three to four ounces of mucopurulent sputum occasionally streaked with blood.

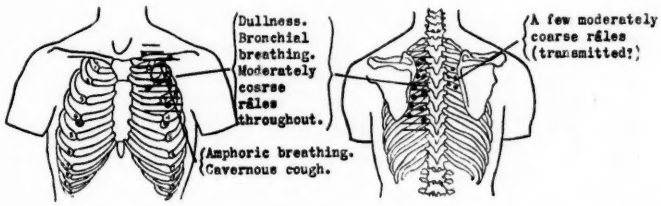
In September she had a severe pain in the left chest, accentuated on breathing and lasting for three or four days. Since that time she had had three or four similar attacks of pain in the left chest.

In December she began to get short of breath on exertion, her appetite became poor, she had occasional night sweats, and began to run an afternoon temperature. Her sputum was found to be positive for tubercle bacilli.

In March she entered a home for tuberculosis, where she was a bed patient. While there she ran an afternoon temperature of 100°; her

pulse was 90, respirations 20. Her sputum continued to be positive, and she raised an average of six to eight ounces every twenty-four hours. She had lost eleven pounds in weight since the onset of her trouble in April. On May 22 she was transferred to the Massachusetts General Hospital.

The physical examination showed a well developed and nourished woman. Her skin was clear. The pupils were equal and reacted to light and distance. The nose and throat were negative. The glands were negative. The heart showed the following: The apex impulse was felt in the fourth interspace about two centimeters beyond the midclavicular line. The left border of dullness was difficult to make out, as it fused with the dullness in the left chest. The right border was displaced slightly to the left. The action was regular. No murmurs were made out. The blood pressure was 130/20. The lungs were as shown in the accompanying diagram. The abdomen was negative. The reflexes were normal. There was slight clubbing of the fingers of both hands. The urine was negative.



The report of the X-ray taken on May 24 was as follows: "Left lung field is dull throughout. Diaphragm can be seen on this side outlined by gas bubble in the stomach. It is distinctly high. Heart and mediastinal contents displaced to the left. Right lung appears normal. Appearance that of collapse of the left lung. Stenosis of the bronchus should be considered. Extensive destruction of the lung could produce a similar picture."

Discussion

BY RANDALL CLIFFORD, M.D.

NOTES ON THE HISTORY

It is interesting that prior to the operation for appendicitis in April she had had no symptoms relative to her chest and was apparently perfectly well. Following the appendix operation she began to have a cough, at first non-productive, later progressive in character and associated with fatigue and pain in the left axilla. From that time her condition gradually became worse.

These facts I think are of considerable significance and suggest that prior to the operation she had an old healed focus of tuberculosis which became reactivated at this time. I cannot emphasize too strongly the importance of having routine X-rays taken prior to all surgical operations. There are instances in which a focus of pulmonary tuberculosis may be concealed without giving rise to any signs or symptoms, but becomes reactivated and progresses rapidly as a result of the shock of operation.

Another striking feature of the history is that it was eight months from the onset of her symptoms to the time when a definite diagnosis of pulmonary tuberculosis was made. It was not until December that her sputum was examined and found to be positive for tubercle bacilli. This emphasizes the fact that even if one does not suspect tuberculosis it is of the utmost importance to have repeated examinations of the sputum. Had this been done in this case the patient might have profited by many months of valuable treatment.

NOTES ON THE PHYSICAL EXAMINATION

There are two things to be considered in regard to the physical examination in this case. The fact that her heart was displaced to the left and that there was a diffuse density as shown by X-ray, together with the slight elevation of the diaphragm on this side, suggests the possibility of collapse of the left lung. We note however that physical examination showed marked dullness, bronchial breathing, an area at the left apex in front in which there was definite amphoric breathing, and diffuse moderately coarse râles throughout the entire left side. The findings were very suggestive of cavitation at the left apex, although this could not be demonstrated by X-ray. The fact that she had bronchial breathing and that the breath sounds came through so well, accompanied by amphoric breathing, was very strongly against this being collapse of the lung. It would be difficult also to explain on the basis of lung collapse the large quantities of sputum—six to seven ounces—which she raised persistently. In view of the history of repeated pleural pain in the left axilla and the physical findings, together with the X-ray, one can feel sure that in this case there was a definitely thickened pleura with extensive fibrosis in the chest as evidenced by the displacement of the heart and mediastinal contents to the left side. In the absence of other physical findings the moderately coarse râles at the right of the spine would appear in all probability to have been transmitted from the other side. The only way to determine whether or not these râles were of

any significance as indicating an active process was to watch the patient over long periods of time, with frequent X-ray examinations.

DISCUSSION OF TREATMENT

There is very little that can be said in this case regarding differential diagnosis. The history, physical examination, X-ray and positive sputum were all consistent with a case of advanced unilateral pulmonary tuberculosis with cavitation at the left apex and with a moderate amount of toxemia. The problems in this case were concerned largely with treatment. Should this patient be allowed to continue medical treatment of absolute rest in bed, or was surgical treatment indicated?

In any case of pulmonary tuberculosis where the question of surgical treatment arises there are certain questions which we should ask ourselves. Do we consider that the patient will get well without surgery? Is artificial pneumothorax indicated? What is the extent and condition of disease in the opposite lung? What is the general condition of the patient and the other organs?

In the case under discussion the patient had been given a long period of absolute bed-rest treatment. In spite of this she had run a slight fever, had continued to raise as much as eight ounces of sputum in twenty-four hours, and showed on physical examination definite evidence of cavitation at the left apex. She had made no marked progress in spite of many months of bed-rest treatment. The prospects of cure were small, and the danger of infecting the opposite lung by inhalation and the possibility of hemorrhage were great.

In view of the history of pleural pain, of the signs simulating an adherent pleura, and of the fact that there must have been a great deal of fibrosis as evidenced by retraction of the mediastinal contents, it was fairly certain that very little could be accomplished by pneumothorax. In many instances, however, when by physical signs the case looks like one of an adherent pleura, a successful pneumothorax may be accomplished, and I believe that attempts should be made in practically all cases before giving up this method of treatment. When one is reasonably sure, however, as in this case, that the pneumothorax can accomplish little, I think it is far better to recommend a thoracoplastic operation immediately without wasting any time or causing the patient any more discomfort than is necessary.

In regard to the third question, that of activity of the other side, I think it is of extreme importance that the case should be kept under constant observation for a long period of time when there is any question of activity. By repeated X-rays every few weeks and by physical examinations one can get a good idea as to whether or not the process is progressing. In view of the fact that in spite of being kept under very close observation there was no evidence of any pathology by X-ray or any further change in physical signs, the few moderately coarse râles which were heard at the right lung root in this case were undoubtedly transmitted from the other side and were considered of little significance.

She was in excellent condition, apart from her tuberculosis, and yet in spite of her long period of bed-rest treatment had made very little progress. Her chances of getting well without operation were small, it seemed to me. The pathology in the chest was limited to the left side, and I considered her an excellent case for operation. A phrenicotomy might have been of temporary value, but in view of her good condition and freedom from disease in the opposite lung she was, I thought, an ideal case for an extrapleural thoracoplasty and a good operative risk.

FURTHER HISTORY

The patient was operated on by Dr. Wyman Whittemore on May 26 for first stage thoracoplasty, the eleventh to the seventh ribs being removed. The X-ray report on June 11 was as follows: "Except for the removal of section of the ribs, the appearance is much the same as in the previous plate."

The second stage was done on June 12, when the remaining ribs were removed. Through an incision medial to the scapula the upper five ribs were resected by laterally retracting the scapula. There was a marked collapse of the left chest following the removal of these ribs. The intercostal ribs were injected with alcohol and the wound closed in layers with drainage.

The wound healed well and the patient made a good postoperative recovery. On June 26 the X-ray report was as follows: "The size of the left chest has decreased considerably since completion of the second stage, and the heart shadow is now visible to the right of the spine. The mediastinum is not displaced. There is no evidence of air on the left side."

She was discharged on July 6 to the home for tuberculosis, where she made an excellent convalescence. Her temperature came down to normal, where it remained until her discharge. Her sputum diminished from six or seven ounces before the operation to one or one and a half ounces following the operation. She was allowed to get out of bed, increasing the time fifteen minutes a day. During her convalescence she gained seven and a half pounds. She was discharged from the home markedly improved.

DIAGNOSIS

Advanced pulmonary tuberculosis.

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WHAT SHALL BE DONE IN RESPECT TO MEDICAL AND LEGAL PRACTICE IN RELATION TO QUALITY OF SERVICE?

THE JOURNAL has on several occasions alluded to remarks by Mr. George R. Nutter, President of the Massachusetts Bar Association. Once again he has placed the Commonwealth under obligation by his outspoken remarks at the recent annual meeting. The matter of compulsory automobile insurance concerns practically every physician in the state. The comments of Mr. Nutter regarding the prosecution of fraudulent claims concern us as citizens and also as physicians. The rates we pay depend upon honest and just administration of the law. Dishonest practices depend in part upon medical testimony.

The remarks of Mr. Nutter in reference to the discipline of lawyers engaged in fraudulent practices have a very definite bearing upon the question of the discipline of physicians for improper conduct. We quote his remarks:

"I see no reason why bar associations, which after all are merely private aggregations of lawyers, should be compelled to look after this question of discipline. It is, after all, the duty of the Commonwealth, if it requires standards for admission, to see that the standards of the profession are kept up and complied with. There is a certain irony, which if it were not irritating would seem delicious, that the Commonwealth should prescribe such low standards of admission as to fill the bar with ill-trained lawyers, and then expect the bar associations to bring proceedings to disbar those who never should have been admitted in the beginning.

"I believe that the bill introduced some years ago, which placed the disciplinary measures in the hands of officials appointed by the Supreme Judicial Court, should be passed. It is in successful operation in the State of Washington. This will not relieve the bar associations, so far as the grievance committees are concerned, for there will always have to be grievance committees; but it will be a recognition by the Commonwealth of its duty in the premises and will put the responsibility—to say nothing of the expense—where it properly belongs."

"I think that it would greatly aid, in carrying these recommendations into effect, and in general, in improving our judicial system, if we could enlist the interest and co-öperation of laymen. You will remember that all the improvements in English Procedure were brought about largely through the work of laymen, and through the great newspapers and magazines of the United Kingdom. Here with us, for some reason, there seems not to have been the same interest."

The situation in medicine is analogous to that in law. The Board of Registration established to protect the public is not granted the power it asks in order to protect the public effectively. Of course education does not necessarily imply high character. But the standards and methods of some of our medical schools chartered in this State have not been such as to favor the development of high character among the students.

The public must be made to understand that reasonable standards for medical practice are established for their benefit and that improper standards of practice and conduct not only affect the health but are now very definitely affecting the pocketbook of the average citizen.

BOSTON'S NEW MILK REGULATIONS

FIVE sections in the revised Milk and Ice Cream Regulations of the Boston Health Department, amended September 12, 1928 and effective January 1, 1929, will place Boston in the first rank of cities requiring effective protection for their citizens in the matter of milk and milk products. The importance of these sections justifies their quotation.

Article XII. Section 1. On and after January 1, 1929, all raw milk, offered for sale in the City of Boston, shall be drawn exclusively

from tuberculin tested and accredited herds, or tested herds on the way to accreditation; shall be certified by the Medical Milk Commission in the manner required by law; and shall, when offered for sale, contain not more than 10,000 bacteria per cubic centimeter.

Section 2. On and after January 1, 1929, all milk not meeting the requirements as contained within Section 1, before being offered for sale, shall be pasteurized and shall comply with the following requirements: shall be natural cow's milk not more than seventy-two hours old when pasteurized; shall have a bacteria content of not more than 750,000 per cubic centimeter before pasteurization; shall be subject for a period of not less than thirty minutes to a temperature of not less than 140 degrees Fahrenheit and not more than 145 degrees Fahrenheit; and shall be immediately cooled to a temperature of 50 degrees Fahrenheit or lower.

Section 5. All cream and skimmed milk offered for sale, not obtained from milk meeting the requirements of Section 1, shall be pasteurized in accordance with the provisions of Section 2, or obtained from pasteurized milk.

Section 6. All ice cream offered for sale shall be manufactured from cream obtained from milk meeting the requirements of Section 1, or from milk meeting the requirements of Section 1, or from pasteurized milk, as defined in Section 2.

Section 8. Pasteurized milk when offered for sale shall contain not more than 50,000 bacteria per cubic centimeter. Provisions are made for the handling and marketing of milk, its pasteurization is regulated, and the two particular weaknesses of pasteurization, unheated foam and cold pockets are specifically banned.

These regulations are of great significance. Under them milk and its common products, excepting butter and cheese which are not commonly disease-bearing, fall under two heads—properly supervised and effectively pasteurized milk, and raw milk which must not only be certified by the Boston Medical Milk Commission, on which the Commissioner of Health is represented, but must come from accredited herds or herds in process of accreditation. No other raw milk may be sold in Boston.

It is our belief that these regulations may serve as worthy models for all communities and great credit is due to Commissioner Mahoney for having invoked them. They mark a distinct advance in public health service.

THE WALTHAM TRAINING SCHOOL FOR NURSES

One of the most unusual plans for providing the people of a community with nursing service was put into operation many years ago by Dr. Alfred Worcester and his associates in Waltham. At that time there was no hospital in Waltham and few nurses. Most of the nurses were of the experienced rather than the trained type.

Dr. Worcester felt that something must be done to provide the people of that section with educated nurses and the doctors with expert assistants.

The most reasonable plan under the circumstances was to develop a school similar to the La Source training school in Lausanne where there was no hospital and also that of the Kaiserswerth where Florence Nightingale was trained.

The Waltham School demonstrated that nurses can be well trained in caring for patients in their own homes and, especially later with the added experience of a period of hospital training, continued to serve the people of that region and sent into the nursing field many graduates who have rendered acceptable service in homes of patients and in hospitals.

The people of Waltham have loyally contributed to the support of this school but changing conditions have made heavy inroads on the resources of the institution. Perhaps other factors may have been operative, including the allurements of other fields of work which took Dr. Worcester away from active participation in the affairs of the school, which have brought about a heavy burden of debt.

In common with many training schools outside the large centers, the registration of probationers has declined and now that the hospital as well as the city is in need of more nurses Dr. Worcester has again taken upon himself the task of building up the training school and hopes for the support of the medical profession in securing funds and pupil nurses.

The reputation of the training school and the hospital and the standing of Dr. Worcester warrant the cordial support of the profession.

THIS WEEK'S ISSUE

Contains articles by the following named authors:

Morrison, L. B. M.D. University of Vermont College of Medicine, 1902. Consulting Roentgenologist, Collis P. Huntington Memorial Hospital, Palmer Memorial Hospital. Roentgenologist, New England Deaconess Hospital. New England Baptist Hospital, Robert B. Brigham Hospital, Faulkner Hospital. Address: 370 Marlborough Street, Boston. Associated with him is:

Bogan, I. K. M.D. Women's Medical College of Pennsylvania, 1910. Physician to Out-Patients, Palmer Memorial Hospital. Their subject is: "Pancreatic Calculi." Page 1129. Address: 193 Aspinwall Avenue, Brookline, Mass.

Hicks, James B. B.S., M.D. Johns Hopkins Medical School, 1924. Urologist with the Lahey

Clinic. His subject is: "Adenoma of the Adrenal Cortex." Page 1140. Address: 605 Commonwealth Avenue, Boston.

NELSON, N. A. B.S., M.D. Long Island College Hospital, Brooklyn, N. Y., 1926. Formerly Chief Chemist, American Water Works and Electric Company, Northern Division. Health Officer, Long Branch and Red Bank, New Jersey. Superintendent, Cincinnati Anti-tuberculosis League. Captain, Field Secretary, Tuberculosis Commission to Italy, in charge in Sicily, American Red Cross. Executive Secretary, Tuberculosis Committee, Brooklyn, Bureau of Charities, Brooklyn, N. Y. Now Epidemiologist in charge of Venereal Disease Control, Massachusetts Department of Public Health. His subject is: "An Outbreak of Gastro-Intestinal Disturbance Following the Eating of Chocolate Cream Pie." Page 1145. Address: Department of Public Health, 546 State House, Boston.

SCHMITZ, HENRY. A.M., LL.D., M.D. Loyola University School of Medicine (Bennett Medical College) 1897. F.A.C.S. F.A.C.R. Professor and Head of Department of Gynecology, Loyola University School of Medicine. Attending Gynecologist, Mercy Hospital. Attending Gynecologist, Cook County Hospital. His subject is: "The Diagnosis and Treatment of Uterine Cancer." Page 1149. Address: 25 E. Washington Street, Chicago, Illinois.

WILKINS, GEORGE C. M.D. Harvard, 1899. F.A.C.S. Surgeon to Elliot Hospital, Manchester, New Hampshire. Member, State Board of Health, New Hampshire. His subject is: "Treatment of Uterine Carcinoma." Page 1154. Address: 814 Elm Street, Manchester, New Hampshire.

THE BOSTON MEDICAL LIBRARY

CAMPAIGN PROGRESS

THE first report meeting of the United Campaign was held at the Harvard Club, Tuesday, November 27. About 60 physicians, members of the various committees, were present at luncheon. Ninety-seven gifts were reported amounting to $41,256, the result of barely three days of active work. Results of the second meeting on Tuesday, December 4, will be reported in our next number.

Informal discussion among members of the committee revealed the fact that laymen, and even some physicians, who had been approached were far from realizing the value of the Medical Society and the Library to the community. It is perhaps natural that both institutions should be superficially supposed to be of professional usefulness exclusively. Yet it needs but a litte consideration of facts to lead to the conviction that the opposite is true.

The benefit to the laymen does, indeed, come mainly through physicians, although the Director's records show that fully as many laymen as doctors visit the Library in search of information. Every doctor draws upon the accumulated knowledge of the whole profession. From student days on, through research or current reading, and through consultation, he adds to his own experience and observation the results of the work of his colleagues throughout the world which he specifically needs, as well as the more general information which keeps him acquainted with recent trends and advances in medical knowledge. The medium is the printed page, and the amount of useful medical publication is enormous.

Even though a physician never visits the Library himself, it is safe to say that most of the new information that comes to him could be traced to its source only through some great central collection of medical literature, of which the Boston Medical Library is an outstanding example. Without such reservoirs, the papers that are read in medical meetings, the articles that are published in medical journals and the text books which form the working library of the individual physician would be impossible. For there is no more rigid rule in the profession, or in the scientific world, than the rule that the results of any individual's study and observation shall be checked with the work of others in the same field.

Into the hospitals, where physicians give a vast amount of unpaid service, goes the accumulated and sifted information to benefit the poorest as well as the richest patient. It appears in legislation for the protection of community health. It underlies preventive medicine and public sanitation. Wherever the health of the individual or community is at stake, nothing less than the collective experience of the profession is sufficient.

It is a noble distinction of the medical profession that no man may hoard his knowledge for his own gain. What is known by any is at the service of all. But channels must be provided through which knowledge may flow. The Boston Medical Library is one of the great main channels. Is it not wholly reasonable and proper that laymen should be summoned to help maintain that channel and keep it clear of obstruction?

THE DOCTOR'S SADDLE BAG

THE MATTER OF MONEY

ANOTHER national election has come and gone. The shouting and the tumult have died away, the nation has been lost or saved, according to the party one adheres to, and business is going on as usual. The last election bet has been paid; the last split pea has been rolled up the steps of Bunker Hill Monument; the last shivering nincompoop, clad in a bathing suit, has trundled his wheelbarrow from Scollay Square, Boston, to Harvard Square, Cambridge, and the lion and the lamb, or more strictly speaking, the elephant and the donkey have lain down again together for another four years in the green fields of prosperity. It is always somewhat of a surprise, after the heat and acrimony of a political campaign, to find next day that the sun rises at approximately the same time, that we still just barely miss the 8:12 and have still to wait fifteen and a half minutes for the 8:28; that stores are open as usual, and that everyday life is about the same. We resent the unreasonable complacency of existence. Dependent on our viewpoint, the country has sustained a great calamity and should be in a state of shock, of suspended animation, if not of rigor mortis, or else everything should go with a greater zest; we should find ourselves about to be engulfed by a tidal wave of prosperity. The settlement of a campaign leaves a void which demands to be filled.

But it is not politics of which I was about to write, although it is something more than an idle thought that it was a great mistake to make the fall the open season for politics. Many of us would prefer to have it an open season for politicians. Politics and prosperity are inseparably linked together in our minds, for prosperity is one of the main talking points of politics, and in the fall, as every doctor knows, prosperity does not exist. The same may or may not apply to other lines of economic endeavor, but certainly in our chosen field the great annual financial depression reaches its zero hour somewhere between the arrival of the coal bill and the appearance of the tax collector. Of course it varies somewhat according to the time collections should have been coming in for the bills that would have been sent out for the visits that might have been made had we taken no vacation, but that is a contributory and not the chief cause of economic distress. There really is no chief cause: it is a summation of energies, mounting up something like this: vacation with money going out and none being earned, plus house needed painting and got it, plus furnace pipes rusted out, plus coal bill, plus new fall overcoat, plus repairs to car, plus painting the fence, plus town taxes, plus insurance, plus notice from bank; no funds plus no practice equals fall financial complex, with Christmas coming.

It is difficult for the practicing physician to accommodate himself to the irregularity of his income, to his periods of overwork and to the dull seasons when he neither works very hard nor relaxes very often. It is difficult, but he must learn to do it if relative contentment is to be his lot. Most of us work best when under moderate pressure; not so well when manifestly overworked; perhaps least well when under no pressure at all. What one of us has not groaned at the thought of the solitary call for the day which comes in at five-thirty on a dull November afternoon! It is an insuperable obstacle to overcome. We would, for the moment, desert practice and take to a roving life on the ocean wave rather than earn that fee.

Due, moreover, to this irregularity of income with seasons of little followed by seasons of plenty, fasts alternating with feasts, we are too prone to tighten our belts and look forward to better times—too often we fail even to tighten our belts, but spend cheerily on, trusting that the Lord will care for his flock. We are too confident that next year we will come into our own and earn that extra which will allow us to save; we are always looking forward to banking, next month, that clear velvet which we could not save this month because collections were poor and the coal bill came due.

At the age of sixty every man should be economically independent. The chances are he will not wish to retire then, and more power to him, but if he should wish to or if circumstances should force him to it, he should be in a position to do so. To every man, and generally with the shock of unexpectedness, comes the stark truth of Emerson's lines in "Terminus":

> It is time to be old,
> To take in sail:—
> The god of bounds,
> Who sets to seas a shore,
> Came to me in his fatal rounds,
> And said: "No more!
> No farther shoot
> Thy broad ambitious branches, and thy root.
> Fancy departs: no more invent;
> Contract thy firmament
> To compass of a tent."

The future should share equally with the present in our plan of life. A fair percentage of each harvest should go into the grain bins for that future. It is well to plan each year on the basis of the past year's income rather than to count on the expectations of an increase. For a certain number of years that increase will come; let a generous share of it fall into the bins for the future. Make saving, moreover, a settled habit and not a chance happen-

ing. Make it as much a fixed monthly charge as is the office rent or the butcher's bill, and let there be an irreducible minimum which will be often, if not generally exceeded.

Doctors are notoriously poor business men, which is perhaps in the nature of a defense reaction, for as surely as they show a little business acumen and a modicum of plain horse sense in money matters, they lay themselves open to the charge of commercialism. That attitude must change; we must learn to walk the middle course, for it is neither a virtue nor a source of respect to be both a poor collector and a foolish spender.

LEGISLATIVE NOTES

The General Court of 1929 will convene in about a month. Just what bills of interest to physicians will be introduced it is not yet possible to foretell.

The Chiropractors may once more seek a special form of registration as they have done in the past without success. It is worthy of note that the number of those graduating from chiropractic schools has declined very sharply of late. This cult seems destined to solve for itself the problem it presents to those who seek to maintain decent standards for the practice of the healing art. Many other cults have solved the same problem in the past. Their death is usually not rapid, but time eliminates their followers if recruits are not added.

The Washburn bill to extend the existing law regarding vaccination to children attending private as well as to those attending public schools will again be introduced. This public health measure is the one for which Dr. Samuel B. Woodward of Worcester has worked so patiently, unselfishly and ably. Three times the House has passed the bill. The Senate has defeated it. This year there is largely a new Senate and new leaders.

If the physicians of the State will interest themselves to present the merits of this bill to the Senators and Representatives there can be no question of its enactment. Everybody opposed to the bill is active and aggressive. If the physicians will only explain the reasonableness and wisdom of this simple measure which by doing away with an existing discrimination will more effectively protect the Commonwealth there need be no fear as to the outcome.

For the convenience of the physicians the JOURNAL publishes the roster of the Legislature. It will help for future reference if this is filed. In the past Fellows of the Society asked to confer with their Senators and Representatives have professed complete ignorance in regard to their identity.

CANDIDATES ELECTED

CONGRESS

1—*Allen T. Treadway of Stockbridge, R.
2—William Kirk Kaynor of Springfield, R.
3—*Frank H. Foss of Fitchburg, R.
4—*George R. Stobbs of Worcester, R.
5—*Edith Nourse Rogers of Lowell, R.
6—*A. Piatt Andrew of Gloucester, R.
7—*William P. Connery, Jr., of Lynn, R., D.
8—*Frederick W. Dallinger of Cambridge, R.
9—*Charles L. Underhill of Somerville, R.
10—*John J. Douglass of Boston, D.
11—*George Holden Tinkham of Boston, R.
12—John W. McCormack of Boston, D.
13—*Robert Luce of Waltham, R.
14—Richard B. Wigglesworth, Milton, R.
15—*Joseph W. Martin, Jr., of North Attleborough, R.
16—*Charles L. Gifford of Barnstable, R.

*Re-elected.

COUNCILLOR

1—*Mark M. Duff of New Bedford, R.
2—*Chester I. Campbell of Quincy, R.
3—*Esther M. Andrews, Brookline, R.
4—*James F. Powers of Boston, D.
5—*Eugene B. Fraser of Lynn, R.
6—*Harvey L. Boutwell of Malden, R.
7—Walter E. Schuster of Douglas, R.
8—George D. Chamberlain of Springfield, R.

SENATOR

Cape and Plymouth

*Donald W. Nicholson of Wareham, R.

Bristol

1—*James G. Moran of Mansfield, R.
2—William S. Conroy of Fall River, D.
3—Nathaniel P. Sowle of New Bedford, R.

Plymouth

Roger Keith of Brockton, R.

Norfolk and Plymouth

Henry F. Ripley of Hingham, R.

Norfolk

Henry L. Kincaide of Quincy.

Norfolk and Middlesex

Samuel H. Wragg of Needham, R.

Norfolk and Suffolk

*Erland F. Fish of Brookline, R.

Suffolk

1—Conde Brodbine of Revere, R.
2—John P. Buckley of Boston, D.
3—Henry Parkman, Jr., of Boston, R.
4—*Robert E. Bigney of Boston, D.
5—Michael J. Ward of Boston, D.
6—*Gaspar G. Bacon of Boston, R.
7—Joseph J. Mulhern of Boston, D.
8—John F. Buckley of Boston, D.

Essex

1—Frank W. Osborne of Lynn, R.
2—James A. Torrey of Beverly, R.
3—*Cornelius F. Haley of Rowley, R.
4—*J. Bradford Davis of Haverhill, R.
5—James E. Warren of Lawrence, D.

Middlesex

1—Arthur W. Hollis of Newton, R.
2—*Clarence P. Kidder of Cambridge, R.
3—*Warren C. Daggett of Somerville, R.
4—Angier L. Goodwin of Melrose, R.
5—*George G. Moyse of Waltham, R.
6—*Charles C. Warren of Arlington, R.
7—*Joseph R. Cotton of Lexington, R.
8—*Walter Perham of Chelmsford, R.

Worcester

1—*Charles Johnson of Worcester, R.
2—George H. Nelson of Worcester, R.
3—
4—

Worcester and Hampden

Warren E. Tarbell of East Brookfield, R.

Berkshire

Charles W. Faulkner of Pittsfield, D.

Berkshire, Hampshire and Hampden

*Frederick E. Judd of Southampton, R.

Franklin and Hampshire

Cady R. Elder of Amherst, R.

Hampden

1—C. Wesley Hale of Springfield, R.
2—Frank Hurley of Holyoke, D.

REPRESENTATIVES

Barnstable

1—William A. Jones of Barnstable, R.
2—*Francis H. Perry of Brewster, R.

Berkshire

1—*Joseph N. Roach of North Adams, D.
2—*Elmer L. McCulloch of Adams, R.
3—*William A. Akeroyd of Lanesborough, R.
3—*Ralph E. Otis of Pittsfield, R.
3—Harry D. Sisson of Pittsfield, R.
4—*Charles H. Shaylor of Lee, R.
5—W. Taylor Day of Great Barrington, R.

Bristol

1—*Charles S. Holden of Attleboro, R.
1—*Francis J. Kelley of North Attleborough, R.
2—Samuel Knowles of Easton, R.
3—John J. Hackett of Taunton, D.
4—Levi L. Wetherbee of Taunton, R.
5—Lewis S. Gray of Swansea, R.
6—Emile J. Gravel of New Bedford, D.
6—*Lawrence T. Woolfenden of New Bedford, R.
7—Philip Barnet of New Bedford, R.
7—*Chester W. Chase of New Bedford, R.
8—Arthur Goulart of New Bedford, D.
8—*John Halliwell of New Bedford, R.
9—Felix J. Dussault of Fall River, D.
9—*John Ford of Fall River, D.
10—Francis Kearney of Fall River, D.
11—William H. Keating of Fall River, D.
11—Thomas Smith, Jr., of Fall River, D.
12—*Thomas C. Crowther of Fall River, R.
12—*William F. Thomas of Fall River, R.

Dukes

1—*Ernest J. Dean of Chilmark, R.

Essex

1—James W. Clark of Amesbury, R.
2—*Archibald M. Estabrook of Haverhill, R.
2—*Allan B. MacGregor of Haverhill, R.
2—Philip H. Stacy of Haverhill, R.
3—*Robert W. Dow of Methuen, R.
3—William A. Menzie of Lawrence, D.
3—*Carl A. Woekel of Methuen, R.
4—*Michael H. Jordan of Lawrence, D.
5—James P. Meehan of Lawrence, D.
6—*Arthur F. Ganley of Lawrence, D.
6—*Thomas J. Lane of Lawrence, D.
7—*Ralph Wheelright of Danvers, R.
8—*John A. Jones of Peabody, D.
9—*Charles W. Ames of Lynn, R.
9—Michael Zack, Lynn, D.
10—*Tony A. Garofano of Saugus, D.
10—*Fred A. Hutchinson of Lynn, R.
10—*C. F. Nelson Pratt of Saugus, R.
11—*William A. Baldwin of Lynn, R.
11—Marion Cowan Burrows of Lynn, R.
11—*Alfred W. Ingalls of Lynn, R.
12—Malcolm L. Bell of Marblehead, R.
12—Harry E. Day of Salem, R.
13—Denis J. Sullivan of Salem, D.
14—*Francis E. Rafter of Salem, D.
15—Bayard Tuckerman, Jr., of Hamilton, R.
15—John C. Wilson of Beverly, R.
16—*Martha N. Brooks of Gloucester, R.
17—*Harold B. Webber of Gloucester, R.
18—Seth H. Boardman, Georgetown, R.
18—*Willard S. McKay of Newburyport, R.

Franklin

1—*Andrew C. Warner of Sunderland, R.
2—*John Sauter of Greenfield, R.
3—*Charles H. Holmes of Erving, R.

Hampden

1—*Daniel W. O'Connor of Palmer, D.
2—*Frank O. Scott of West Springfield, R.
2—*William J. Sessions of Hampden, R.
3—*John P. Gaffney of Springfield, D.
4—Nicholas G. Nestor of Springfield, R.
5—John K. Joy, Jr., of Springfield, R.
6—Emma E. Brigham of Springfield, R.
7—Tycho M. Petersen of Springfield, R.
8—Richard H. Stacy of Springfield, R.
9—Norman Leon Snow of Springfield, R.
10—*Daniel J. Coakley of Chicopee, R., D.
11—Paul G. Martel, Chicopee, D.
12—Charles D. Chevalier of Holyoke, R., D.
13—*Francis P. Clark of Holyoke, R., D.
14—*William E. Kirkpatrick of Holyoke, D., R.
15—Dexter A. Snow of Westfield, R.

Hampshire

1—*Edwin L. Olander of Northampton, R.
2—Charles R. Damon of Williamsburg, R.
3—*Frank A. Brainerd of South Hadley, R.
4—*Roland D. Sawyer of Ware, D.

Middlesex

1—Dennis F. McCarthy of Cambridge, D.
1—*George C. McMenimen of Cambridge, D.
2—Ralph N. Hamilton, Cambridge, R.
2—Timothy D. Sullivan, Cambridge, D.
3—Charles T. Cavanaugh, Cambridge, D.
3—Timothy J. Cronin, Cambridge, D.
3—Paul A. Dever, Cambridge, D.
4—William B. Baker of Newton, R.
4—*Rupert C. Thompson of Newton, R.
5—*Clarence S. Luitwieler of Newton, R.
5—*Leverett Saltonstall of Newton, R.
6—*Jeremiah J. Healy of Natick, D.
7—*Albert W. Bullock of Waltham, R.
7—*Arthur A. Hansen of Waltham, R.
7—*Arnold Leonard of Watertown, R.
8—Harry L. Adams of Holliston, R.
8—Thomas G. Portmore, Framingham, R.
9—*William H. Wellen of Marlboro, R.
10—*Leslie W. Sims, Maynard, R.
11—*Edward J. Robbins of Chelmsford, R.
12—George T. Keyes of Pepperell, R.
13—B. Farnham Smith of Concord, R.
14—Henry Achin, Jr., of Lowell, R.
14—Victor F. Jewett of Lowell, R.
14—Frank E. McLean of Lowell, R.
15—Daniel F. Moriarty of Lowell, D.
15—Patrick F. Nestor of Lowell, D.
16—Charles H. Slowey of Lowell, D.
17—Harry Dunlap Brown of Billerica, R.
18—*Louis Ellenwood, Reading, R.
18—*Wilford A. Walker, Woburn, R.
19—*Maynard E. S. Clemons of Wakefield, R.
20—*Joseph L. Larson of Everett, R.
20—*Elmer E. Spear of Everett, R.
21—Burt Dewar, Malden, R.
21—Howard Fall, Malden, R.
21—John V. Kimball, Malden, R.
22—Mary Livermore Barrows of Melrose, R.
22—*Lemuel W. Standish of Stoneham, R.
23—*James E. Hagan of Somerville, D.
24—William J. Bell of Somerville, R.
24—Joseph J. Borgatti of Somerville, D.
24—William P. Corbett of Somerville, D.
25—Hiram N. Dearborn of Somerville, R.
25—Frank A. Teele of Somerville, R.
26—*Richard D. Crockwell, Medford, R.
26—*John J. Irwin, Medford, R.
26—Arthur L. Youngman, Medford, R.
27—*Joseph Earl Perry of Belmont, R.
28—*Elliott R. Barker of Arlington, R.
28—*George E. Briggs of Lexington, R.
29*—Thomas R. Bateman of Winchester, R.

Nantucket

1—*Arthur W. Jones of Nantucket, R.

Norfolk

1—*John K. Burgess of Dedham, R.
1—Sydney M. Williams of Wellesley, R.
2—*Albert F. Bigelow of Brookline, R.
2—*Arthur P. Crosby of Brookline, R.
2—*Renton Whidden of Brookline, R.
3—Thomas S. Burgin of Quincy, R.
3—William R. Thomas of Quincy, R.
4—Arthur I. Burgess of Quincy, R.
4—*Edward J. Sandberg of Quincy, R.
5—*Newland H. Holmes of Weymouth, R.
6—Horace T. Cahill, Braintree, R.
7—*Josiah Babcock of Milton, R.
8—Henry W. Caldwell of Walpole, R.
9—Everett C. Crane of Avon, R.
10—Joseph F. Stone of Canton, R.
11—*Horace W. Hosie of Franklin, R.
12—Millard B. LaCroix of Millis, R.

Plymouth

1—Ira C. Ward of Plymouth, R.
2—*Ernest H. Sparrell of Norwell, R.
3—Edgar T. Brickett of Cohasset, R.
4—*William H. McCarthy of Rockland, D.
5—*Ralph Stevens of Whitman, R.
6—Orvis F. Kinney of West Bridgewater, R.
7—*Kendrick H. Washburn of Middleboro, R.
8—John Holmes, Brockton, R.
9—*M. Sylvia Donaldson of Brockton, R.
9—H. Merton Snow of Brockton, R.
10—John P. Lyons, Brockton, D.

Suffolk

1—*William H. Barker, Boston, D.
1—James S. Coffey, Boston, D.
1—*William H. Hearn, Boston, D.
2—Luke D. Mullen of Boston, D.
2—*Charles S. Sullivan, Jr., of Boston, D.
3—John P. Higgins of Boston, D.
3—Felix A. Marcella of Boston, D.
4—*George P. Anderson of Boston, R.
4—*Richard E. Johnston of Boston, R.

5—*Henry L. Shattuck of Boston, R.
5—*Eliot Wadsworth of Boston, R.
6—*William P. Hickey of Boston, D.
6—*James J. Twohig of Boston, D.
7—Eugene P. Durgin of Boston, D.
7—John J. Reardon of Boston, D.
8—Francis D. Dailey of Boston, D.
8—*Anthony A. McNulty of Boston, D.
9—Frank E. Bryant of Boston, R.
9—Richard Daniel Gleason of Boston, D.
10—James M. Brennan of Boston, D.
10—*Thomas S. Kennedy of Boston, D.
11—*Thomas Harold Carr of Boston, D.
11—*Timothy J. McDonough of Boston, D.
12—*Abraham B. Casson of Boston, R.
12—Charles L. Page of Boston, R.
13—John V. Mahoney of Boston, D.
13—Ignatius J. O'Connor of Boston, R.
14—*Isidore H. Fox of Boston, R.
14—Bernard Ginsburg of Boston, R.
15—William C. Creed of Boston, D.
15—*Lewis R. Sullivan of Boston, D.
16—*Joseph Finnegan of Boston, D.
16—*Francis J. Hickey of Boston, D.
17—*Owen A. Gallagher, Boston, D.
17—Frank J. McFarland, Boston, D.
18—*Joseph A. Logan of Boston, D.
18—*Patrick J. Welsh of Boston, D.
19—William M. McMorrow, Boston, D.
19—Joseph C. White, Boston, D.
20—*Harold R. Duffie of Boston, R.
20—*George A. Gilman of Boston, R.
21—*Martin Hays of Boston, R.
22—*Leo M. Birmingham of Boston, D.
23—*Frank D. Crowley of Chelsea, R., D.
24—John W. MacLeod of Chelsea, R.
25—*Augustine Airola of Revere, R.
25—Thomas F. Carroll of Revere, R.
26—*Edgar F. Power of Winthrop, R.

Worcester

1—Clyde H. Swan of Barre, R.
2—*Herman Pehrsson of Gardner, R.
2—*Albert L. Potter of Gardner, R.
3—*William Casey of Spencer, D.
4—*Wilfred J. Lamoreaux of Southbridge, D.
4—Edward W. Staves, Southbridge, R.
5—Wilfred P. Bazinat, Webster, D.
5—Joseph N. O'Kane, Dudley, D.
6—*John S. Derham of Uxbridge, D.
7—Louis A. Webster of Blackstone, R.
8—George W. Knowlton, Jr., of Upton, R.
8—L. Blaine Libbey of Milford, R.
9—George McLeod of Clinton, R.
9—Frank A. Powers of Bolton, R.
10—Fred L. Butler, Leominster, R.
10—*Edward H. Nutting, Leominster, R.
11—*Louis N. M. DesChenes of Fitchburg, R.
11—*Henry A. Estabrook of Fitchburg, R.
12—Martin Swanson of Worcester, R.
13—*Sven A. Erickson of Worcester, R.
14—*Edward J. Kelley of Worcester, D.
15—*Charles A. Kelley of Worcester, D.
16—*Joseph W. Leyden of Worcester, D.
17—Victor E. Rolander of Worcester, R.
18—Arthur T. Squires of Worcester, R.
19—Anthony R. Doyle of Worcester, D.
20—*George F. Brooks of Worcester, R.
21—*Slater Washburn of Worcester, R.

MISCELLANY

THE STORY OF THE CHRISTMAS SEAL

By Helena L. Williams

Every year millions of Christmas seals are sold in this country to control and prevent tuberculosis. They have become a symbol of the great war that is being waged against an ancient, preventable disease. But in 1904 the Christmas seal originated in a small way to give a chance for health to a group of tuberculous children in a foreign country.

In that year a children's hospital was needed in Copenhagen, Denmark. A postal clerk in that city named Einar Holboell heard of this and conceived the idea that stamps, especially designed to decorate Christmas letters and packages, could be made to finance the cost of the building. His enthusiasm won for him the endorsement of the Danish royal family, and the first Christmas seal was designed and placed on sale in the post offices. The good citizens of Denmark purchased enough of them to insure for the sick children the best medical and nursing care available.

A pioneer in the field of social service in America received a letter from his mother country bearing one of the bright-colored little stamps. His name was Jacob Riis and, his curiosity aroused by this new decoration, he inquired about its purpose. The possibilities of its use in the United States impressed him. He wrote an article that was published in the *Outlook* in which he described what the stamp had achieved in Denmark.

In that article, Miss Emily P. Bissell of Wilmington, Delaware, found the solution of her own problem; namely, how to raise $3,000 for a tuberculosis pavilion in her state. She organized the first sale of Christmas seals in the United States and as a result the pavilion was built. In 1908, Miss Bissell was able to induce the authorities of the American Red Cross to undertake a nation-wide sale of tuberculosis Christmas stamps. Women's clubs, religious bodies and local Red Cross chapters assisted in the campaign. From then on until 1920 the Red Cross conducted the sale of the seals.

From 1907 to 1910 the National Tuberculosis Association had been organizing its warfare against the disease with the support of foremost scientists, but with little funds. To strengthen the organization's work, the American Red Cross joined with it in the Christmas seal sale. The partnership between these two great welfare bodies lasted for ten years. Then, in 1920, it was dissolved because the American Red Cross desired to continue its annual Roll Call, begun in the years of the Great War, and it did not wish to appeal to the public for funds twice a year. Since that time only the double-barred cross, emblem of the tuberculosis movement, has appeared on Christmas seals.

Through the power of the Christmas seal, state after state was gradually organized to attack tuberculosis with a scientific program. The state organizations entered the larger cities and counties and formed local associations. Together, led by the national body, they have brought into existence nearly all of the present-day community machinery for combating tuberculosis.

The little stamps help to control the sources of infection especially to children, to educate everyone in health habits and to prevent economic loss due to the death of producers. This year the National Tuberculosis Association and its affiliated organizations will hold the twenty-first sale of Christmas seals throughout the country

HEALTH CONDITIONS OVER UNITED STATES GENERALLY IMPROVE

General improvement of health conditions in the United States is reflected in the weekly review of the prevalence of communicable diseases made public November 16, by the Public Health Service. For the week ended October 27 of this year, every one of the seven reportable communicable diseases showed decreases in prevalence as compared with the corresponding week of last year.

Deaths resulting from influenza and pneumonia for the 1928 week were about the same as those for 1927, totaling 572 and 573, respectively.—*U. S. Daily.*

TUBERCULOSIS ABSTRACTS

A Review for Physicians

Issued by the National Tuberculosis Association

HIPPOCRATES wrote many medical aphorisms, which like Gee's clinical aphorisms are well known. Always concise in presentation, these aphorisms lead to thought, arouse discussion, or foster healthy disagreement. This, Lawrason Brown states, was his desire when his own "Tuberculosis Theses" were published in complete form a decade ago. Today they epitomize what the average physician finds from his experience, and, colored no doubt by the experience of many men, they serve as his guide for action. Because they do serve "as a guide for action," they are presented here in part:

DIAGNOSTIC THESES

1. An appearance of ruddy health does not exclude tuberculosis.

2. Prolonged and intimate exposure at any time of life, but especially in childhood, is vastly more important in diagnosis than "un-associated" or "non-contact" heredity.

3. Constitutional or general symptoms lead toward the diagnosis of tuberculosis, while the localizing symptoms point out the organs involved.

4. The history or presence of certain complications, as fistula in ano, pleurisy, adenitis, a discharging ear coming on painlessly, are all strongly suggestive of tuberculosis.

5. Pleurisy with effusion, not attributable to other causes, should be treated for a time as due to tuberculosis.

6. A diagnosis, tentative at least, must be made whenever an individual spits a dram or more of blood that cannot be proved to be due to other causes (e. g., mitral stenosis).

7. Symptoms indicate that a patient is sick, while physical signs point out only the mischief that has been done.

8. Symptoms without physical signs demand treatment, while physical signs without symptoms require often only careful watching.

9. Absence of tubercle bacilli in the sputum means only that bronchial ulceration has not occurred.

10. Auscultation is more important than inspection, and the detection of râles by the auscultation of the inspiration following cough is the most important procedure in the detection of physical signs of early pulmonary tuberculosis.

11. Localized râles at the apex are second in importance only to tubercle bacilli in the sputum.

12. The disease is practically always more extensive than the physical signs indicate.

13. Abnormal physical signs in one apex should be considered as due to pulmonary tuberculosis until proved not to be, while those at the base should be looked on as non-tuberculous until definitely proved so.

14. The fluoroscope, the Roentgenogram and particularly stereograms may reveal and locate pathological pulmonary changes to be detected by no other means.

15. Extensive "peribronchial" changes in stereograms may occur with slight or no physical signs, while parenchymatous changes are usually accompanied by abnormal pulmonary sounds.

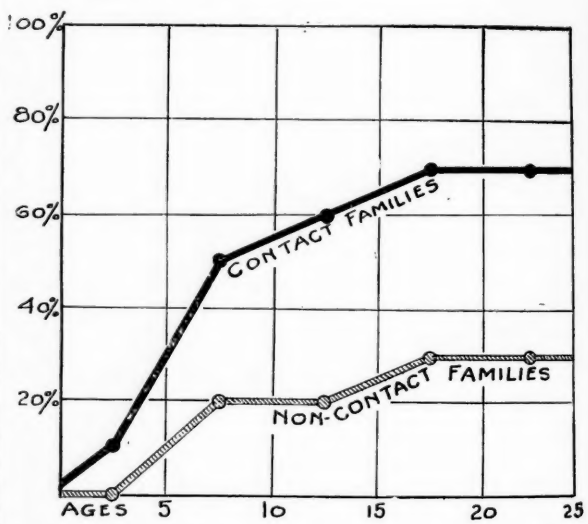
PROGNOSTIC CHANGES

1. Puberty and the menopause have less bearing upon the disease than pregnancy; especially repeated, frequent pregnancies, and hence marriage for women increases the uncertainties.

2. The mentality and characteristics of a patient's family, their ability and willingness to help in his recovery by self-sacrifice over long periods of time, are most important.

3. He who returns to his former occupation when congenial and not complicated by sudden great effort and so makes his living with least exertion and worry, avoids relapse most often.

4. Recovery in a climate in which a patient is to live, especially if accomplished at home, bespeaks greater longevity than immediate change of climate on arrest of disease. Climate may be only a minor factor in this effect.



Tuberculous Lesions in Children of Contact and Non-contact Families, According to Age Groups (Opie and McPhedran).

5. An acute onset with extensive physical signs or with severe and protracted symptoms points to a prolonged illness or an early fatal termination.

6. The continuous gain of weight on an ordinary diet is the best indication of favorable progress but can occur with advancing disease.

7. Digestion is the keystone of the prognostic arch.

8. Fever is the best sign of progressive disease and its chances of disappearance are inversely proportional to the length of time it has persisted.

9. Persistent high temperature under appropriate treatment, with slight physical signs, is grave.

10. The pulse rate, together with the temperature and weight, forms the prognostic triad.

11. Uncontrollable excessive cough is the worst

form of over-exercise and favors a quick deterioration of the bodily resistance.

12. Physical signs tell by inference what has happened in the lungs, symptoms what is happening. The general condition is more important than the physical signs or the history.

13. Extent of disease marks the time element; intensity the acuteness.

14. Improvement and even arrest may occur without change in physical signs.

15. Tubercle bacilli in the sputum indicate bronchial ulceration, and the larger the number, possibly the greater or more acute the ulceration, but enormous masses may occur in favorable cases.

16. Duration of treatment of less than three months is of little permanent help, while three or four years of treatment may complete an arrest.

THERAPEUTIC THESES

1. The treatment of pulmonary tuberculosis demands little knowledge of drugs but much about the immediate and *prolonged* education of the patient.

2. The marked tendency to temporary arrest or quiescence, even in advanced stages, rests upon the brow of the tuberculous evil-doer like the curse of Cain.

3. The danger time in tuberculosis, the periods of the "false convalescence" of Laennec, cannot be over-emphasized.

4. The time allotted to treatment is usually too short, for recovery is ever longer than onset. The value (possibly the results) of treatment increases as the square of the time; that is, two years are four times as valuable as one.

5. At home and abroad, in the desert or on the ocean, in the lowlands or upon the mountains, patients may recover anywhere and everywhere, for it matters less where than how they live.

6. The sanatorium, the best place in which to treat patients in large numbers, has shown that permanent arrest may follow effectual treatment; the hospital has afforded evidence that direct contagion may in part be controlled, while the dispensary has become the advanced attacking line, so to speak, that carries the warfare into the enemy's camp.

7. The length of stay in these institutions depends upon the object to be attained: for permanent recovery, two or three years; for quiescence, at least three months; for prevention of infection from far advanced cases, as much as possible of the time between admission and death.

8. Remember that too much food may, in the end, prove as disastrous as too little food.

9. Exercise should be regarded as a powerful and dangerous medicine.

10. Since the vast majority of patients must seek treatment only in the climate in which they contract the disease, the so-called climatic treatment is of importance to hardly more than 5 per cent. of all patients.—*Tuberculosis Theses, Lawrason Brown, M.D.*

INTERNATIONAL POSTGRADUATE MEDICAL COURSES

International Postgraduate Medical Courses have been arranged with the help of the medical faculty of the University by the Lecturers' Association for medical continuation courses and the Kaiserin Friedrich-Haus. Part of the courses take place permanently, part only in March-April, 1929.

I. PERMANENT COURSES

a) Courses during 2 to 4 weeks.
b) Courses as guest-assistants in clinics, hospitals and laboratories during 2 to 3 months and longer for gentlemen desiring to do practical work under systematic supervision.

II. COURSES IN MARCH-APRIL, 1929

a) General course: "Progress in the realm of medicine with special regard to diseases of the heart" (from 4-16 March) with the co-öperation of the following gentlemen: v. Bergmann, Dresel, F. Klemperer, Munk, Rosin, V. Schilling, Schlayer, Strauss. Fee RM 80.—
b) Special course in urology (from 18-23 March) with the co-öperation of the following gentlemen: Bätzner, Casper, E. Joseph, v. Lichtenberg, Ringleb, Rumpel. Fee RM 75.—
c) Special Course in surgery on the theme: "A week on breast and stomach surgery" (from 18 March-13 April) with the co-öperation of the following gentlemen: Bätzner, Bier, Borchardt, Katzenstein, Kisch, Mühsam, Sauerbruch, Unger. Fee RM 75.—
d) Special course in Roentgenology, taking into particular consideration its application in surgery (from 14-21 April) with the co-öperation of the following gentlemen: Chaoul, Max Cohn, Cramer, Frik, Hintze, Lazarus, Levy-Dorn, Munk, Rumpel. Fee RM 100.—
e) Single courses on all special fields of medical science including practical work.

The courses are held in German, but numerous professors are able to lecture in the English, French and Spanish language.

The information bureau of the Kaiserin Friedrich-Haus für das ärztliche Fortbildungswesen, Berlin NW 6, Luisenplatz 2-4, is instrumental in procuring suitable lodgings, gives information as to cost of stay, arranges the attendance in clinics at operations, etc., and, upon desire, sends detailed syllabuses.

PHYSICAL EDUCATION AND SCHOOL HYGIENE CIRCULAR NO. 13

Washington, D. C.,
November 5, 1928.

It is stated by Benedict and Parmenter that the energy expended by the average person in walking up an ordinary flight of 15 steps is equal to that used in walking on the level 15 times the distance represented by the vertical height of such a staircase and 3 times as much as he would use in descending such a flight of steps.

By the requirement of a recent law in New York State "physicians to be qualified for certification as school medical supervisors shall possess the following qualifications:

1. Graduation from a medical school registered by the State Education Department and licensed to practice medicine in New York State.

2. One year of acceptable interneship. Five years of successful practice in medicine may be accepted in lieu of one year of interneship.

3. Six semester hours of postgraduate work in a school or schools of medicine in such subjects and in such institutions as may be approved by the State Commissioner of Education. The following subjects indicate the type of instruction that should be included in such postgraduate courses:

a. Medical examination of school children.
b. Psychiatric problems of school age.
c. Problems of growth and nutrition.
d. Preventable defects of eyes, ears, teeth, posture.
e. School sanitation.
f. Communicable disease control.

4. Six semester hours of postgraduate work in a school or schools of education in such subjects and in such institutions as may be approved by the State Commissioner of Education. The following subjects indicate the type of instruction that should be included in such postgraduate courses:

a. Principles of health education.
b. Organization and administration of health education in public schools.

The State Commissioner of Education may grant a temporary certificate to physicians who present satisfactory evidence of successful experience for three or more years in medical inspection and health service.

The temporary license shall be valid for only one year, but may be renewed twice upon presentation of evidence of postgraduate work as suggested in paragraphs 3 and 4 above.

Where undergraduate medical instruction and training have included special preparation in the field of health service equal to the qualifications set up for postgraduate work, such undergraduate preparation may be accepted for the certification of medical supervisors."

These requirements should lead to a vast improvement in the quality of medical inspection, since heretofore very few medical inspectors in any State have had any special training for this work.

The division of Virginia last year into 10 districts each presided over by a supervisor of physical and health education, has proved very successful. These supervisors visited 4,600 schools, giving personal supervision to over 14,500 classes and introduced physical education activities for the first time into 1,400 schools. Sanitary toilet conditions were made satisfactory in 800 schools. Over 100 schools had their water supply made safe.

Teachers are proving efficient in the annual inspection of pupils for physical defects. The number of children receiving the State's "Five-Point Certificate" for the correction of defects covered by the Five-Point plan was over double the number for the preceding year.

There was an increase of more than 25% in the number of schools having 85% or more of their enrollment participating in group activities.

The Department of Public Instruction of Michigan has prepared in outline a suggested Health Education Program for Smaller Schools which should prove of much value in the promotion of such work in those schools which have little in the way of equipment or trained teacher leadership in this phase of education.

Dr. Henry S. Curtis, Director of Hygiene and Physical Education in Missouri, states in his monthly bulletin that the high schools built in Missouri in the past four years have an average of four and a half acres of playground per school. The School at Mexico has 88 acres "which is probably close to the record for the U. S."

The State Board of Education of West Virginia has issued a new edition of its Manual of Physical Education for Rural Schools. There is an excellent chapter on home-made playground apparatus.

The Department of Education of Massachusetts has issued a Manual of Physical Education for Grades 1 to 3 and another for Grades 4 to 6. The teacher is urged to conduct activities out of doors if possible. "Only as a last resort, use the class-room," and "indoors see to it that you approach the out-of-door condition as closely as possible by opening the windows." The teacher should train her "eye for good position whether sitting, standing or in action, and when teaching exercises see to it that enough force goes into your teaching and the execution of the class, so that the effect may carry over into permanent good carriage and graceful movement." The need for more time given to physical education is emphasized.

A course in Safety Education for elementary and junior high school grades has also been issued by the State Department of Massachusetts.

The physical education law of Illinois has been amended. Among its requirements are that all normal schools shall furnish a regular course of physical education and training for teachers. "After August 31, 1928, no student shall be graduated who has not completed a year's work in physical education, comprising at least 144 forty minute periods."

In Maryland, 31,000 children took part in badge tests last year; 52% of girls and 36% of boys participated in county play days.

Play Days were held in 40 counties of Minnesota, and in 16 counties of Alabama in the past school year.

The State directors of health and physical education at a recent meeting went on record as opposing the organization of "Junior Olympics" both for boys and girls.

A committee of the local medical association of Omaha, Nebr., was recently appointed to investigate the subject of interscholastic athletics in the grade schools of that city. It is needless to say that the committee reported that such activities were ill advised.

Three hundred and seventy-five school playgrounds in New York City were opened daily this past summer for the benefit of the children and the Board of Education has included in the 1929 budget funds for opening 56 more next summer. Eight playgrounds gave an original shadow pantomime safety "movie."

The Board of Estimate of New York City has been asked to appropriate approximately $5,000,000 for the purchase of playground sites for public schools. One hundred and twenty-five schools in the more congested areas have no outside playgrounds.

From life tables constructed for superior cricketers in England it has been shown that these players live somewhat longer than the general male population of England and Wales. The distinguished amateurs live longer than the professionals as a rule, probably because of better social selection.

According to a study made by David F. Hoy, undergraduates participating in athletics at Cornell had a somewhat better average college record along other lines than other students. As the result of a similar investigation in Rutgers University by Geo. W. Fraser, it is concluded that "athletics have not harmed the academic work of the athletes." An earlier study of Rutgers men by Bevier was not so favorable to athletics.

Robert T. Hall from a comparison of athletes and non-athletes in the high schools of four towns in Colorado concludes:

1. Athletics slightly decrease the scholastic efficiency of students. If we concede that morals and health are to arise from athletic practice, however, it is probable that the athlete will get much more from school than the non-athlete.
2. Boy athletes are either elected or else choose more extra-curricular (not counting athletic) activities than the non-athletes, while the reverse is true among the girls.
3. Boy athletes are on the average about a half-year older than the non-athletes, while the girl athletes are about two months younger than the non-athletes.
4. Boy non-athletes rank considerably higher in intelligence than the boy athletes, while girl non-athletes rank slightly lower than the girl athletes. Both these conditions remain true if age is considered as a factor.
5. The boy non-athletes rank considerably higher in achievement in school than the athletes, while the girl non-athletes rank slightly higher than the girl athletes.—*American Physical Education Review*, June, 1928, p. 389.

Cook and Thompson compared the marks of 100 boys in the Hughes High School of Cincinnati who, from 1922 to 1926, won letters in one or more of the following sports: Football, baseball, basketball, track, swimming and tennis, with an equal number of non-letter boys selected in alphabetical order from the same classes. They conclude "there seems to be no justification for the assumption that letter boys are naturally much different in ability from other high school boys. In educational results the letter boy falls a trifle short of measuring up to the standard, and in rate of progress he is just a trifle slow. It may be that we can hardly expect him to make a more favorable showing with the large drain on his time and vitality."—*School Review*, May, 1928, page 350.

The great difficulty with athletics is not its overemphasis on athletics, but that it does not emphasize athletics enough. We should have a well developed system of intramural competition as would pull every boy out of the pool halls and smoke halls and loafing places on to the athletic fields. That could be accomplished by an adequate system of intramural, second varsity, freshman and weight teams. Boys must be interested, and they cannot be expected persistently to occupy "scrub" positions on teams, where they are constantly being run over and trampled upon by the first team men. They need to meet men of their own calibre and to enjoy winning once in a while. It is apparent to everyone that we are going to extremes in intercollegiate competition; we have a highly specialized team on the field and a lot of "ballyhoo" on the bleachers. It seems obvious to anyone that as long as that discrepancy exists we are not pursuing the proper policy of athletics.—C. F. Taeusch, State University of Iowa.

Lehman and Witty of the University of Kansas, in A Study of Play in Relation to Intelligence, found that "dull" children display more interest in play requiring motor activity than do "bright" children, and that they are more interested in games which involve "social participation." They conclude "these facts should be of conspicuous value to the educator, for a sane and successful educational program must recognize the interests and abilities of the child. Such recognition must be tempered of course by sound adult judgment of what the child actually needs. In this way only can the school be made to yield its maximum returns." The details of the Study will be found in *The Journal of Applied Psychology* for August, 1928.

In an article on Protecting the School Playground, in the *School Board Journal* for March, 1928, Kent Lighty emphasizes the need for proper fencing of such grounds. Not only does this prevent many accidents from children rushing into the street, but it is an important aid to playground supervision.

Prof. E. A. Lincoln of Harvard University finds that physically girls develop at a faster rate than boys, probably by at least a full year. This probably accounts for their general superiority in school work. "There are not, it appears, significant sex differences, in general intelligence as measured by either group of individual examinations, except a somewhat greater tendency of the boys to make higher scores than the girls in the upper ranges of the group tests. This tendency, however, is probably due, in part, at least, to test items which give the boys something of an advantage.

In school accomplishment tests, the girls show a generally higher achievement in all subjects with the exception of history, and possibly of arithmetical reasoning. School marks also indicate that girls are superior to boys in their school work. . . . The facts of variability differ greatly when different traits are studied, or when the same trait is studied in different groups.

It seems clear, then, that the problem of providing for sex differences becomes merged in the larger problem of making provision in the school for the much greater differences among individuals. . . ."

Franzen, in his School Health Study for the American Child Health Association, finds that "height is insufficient skeletal information to use as a basis of weight classification. Individual differences in chest dimensions and hips are more important as determinants in weight." He finds the proportionate influence upon weight of the breadth of hips in girls as 33%, depth of chest 28%, breadth of chest 25% as compared with 14% for height; while for boys the relationship of breadth of hips to weight is 30% compared with depth of chest 25%, breadth of

chest 20%, height 20%, and breadth of shoulders 5%. This is in line with the statement of Gray and Parmenter that body weight seems to vary as the greatest outer diameter of the pelvis. Franzen finds that a combination of height, breadth of hips and breadth and depth of chest furnishes the most accurate bony indicator of weight.

In Virginia the "supervised lunch," set in operation by State Supervisor of Health and Physical Education, Mr. E. V. Graves, has proved a great success. In most of the rural schools children bring what the parents provide. Nothing in the way of food is furnished by the school. At the lunch hour the children eat together under the supervision of the teacher. This makes for deliberation in feeding, as the children can not pursue other activities until the lunch period is over. By observing what other children bring, and how their lunches are put up, there has been a decided general improvement in the average content of the lunch boxes. Opportunity is offered also for the teacher to make suggestions as to best foods. The improved materials of the lunches and the leisure with which they are eaten have produced definite improvement in the nutrition of many children throughout the State.

The *Statistical Bulletin* of the Metropolitan Life Insurance Company for June, 1928, states that among nearly 20,000 employees of that company who have received dental examinations in the last twelve years, only two sets of perfect teeth have been found. It is in the faults of enamel (pits and fissures) which exist from the time the teeth are formed that decay begins. The treatment of these defects in school children for the prevention of decay is described in the publication "Better Teeth" issued by the Bureau of Education last year.

McCarrison kept 2,500 rats on faulty diets over a period of 2½ years. The mortality of these rats was 31% as compared with 1% for 865 rats kept at the same time on a good diet. He believes that the rats of the first group were rendered highly susceptible to infection by their defective diets, and that this applies also to humans.—*British Medical Journal*, January 21, 1928.

"Our experience in feeding laboratory animals leads us to believe that the outstanding fault in our diet is the excessive use of meats and cereals, to the exclusion of sufficient fruits, vegetables and milk. The latter foods contain vitamins, minerals, salts and low protein, and in our experience with experimental animals they produce sound teeth and bones.

Primitive races, among whom practically no dental disease is found, know nothing about calcium lactate and parathyroid extract. They do not devitalize their foods by refining and preservative processes and then try to replace the deficiencies by chemical makeshift."—Percy R. Howe.

L. O. Kappes of Rochester, Minn., compared the history of children with caries and those comparatively free from dental defects. The only etiologic factor that seemed of definite significance in preventing decay was a diet consisting largely of fruits and vegetables.

Hawkins, Hendricks and Hillis of the College of Dentistry, University of Southern California, from a study of dental conditions and histories of junior and senior students find that: "The general health of the individual is a result of his dietary habits and, moreover, it contributes in some degree for or against dental caries. Breast feeding contributes to a better state of general health, but the absence of it does not of itself contribute largely to a lack of immunity.

The toothbrush as usually applied is not an effective instrument for the prevention of dental decay.

Heredity is probably not a great factor, but the faulty dietary habits of the parents are acquired by the children. Faulty pits existed in a high percentage of the immune; hence structural defects are not the primary cause of caries, but may be the starting-point when immunity is lost.

Acid-forming foods in the form of meat, fish and eggs are probably only a slight factor, but in the form of bread and pastry are one of the direct causes of dental decay. This is no doubt due to a local acid fermentation. The survey shows a heavy consumption of sugar to be another cause of caries. This may be due to local or systemic action. The importance of the alkaline-forming foods is very apparent."—*Jour. Am. Dent. Ass'n.*, February, 1928.

In Pitt County, North Carolina, a silver cup is awarded each year to the rural school the children of which make the best record and show the best results in care of their teeth. A similar cup is awarded to a city school.

Dr. E. Blanche Sterling, in her Study of the Physical Status of the Urban Negro Child recently published by the U. S. Public Health Service, found only 68% with defective teeth and among these children the amount of decay was comparatively small.

She finds that "the boys and girls with the lowest intelligence quotients have the greatest number of the more important physical defects." This does not hold good, however, when slight and less important defects are included, when it is found that in the case of children of all ages and both sexes the greatest number of all defects is found with an intelligence quotient of 90-99. The smallest number of the more important physical defects was found, with only two exceptions, in the group having an intelligence quotient of 100-109. When all defects are considered, the fewest still occur most frequently in the 100-109 intelligence quotient group. In no instance were the fewest defects found in the highest intelligence quotient group.

Harry M. Keal of the Cass Technical High School of Detroit, writing of mental ratings and scholarship in School and Society, September 1, 1928, concludes that "Physical condition is one of the greatest factors affecting school success and the duration of school life" and "the correction of defects constitutes one of the most important problems in education."

A trachoma survey is being made in Montana in the schools of the counties adjoining the Indian reservations. The object is to determine to what extent trachoma is spreading from the Indian to the white population and to secure proper treatment for any children who have contracted the disease.

In a hearing survey of the schools of San Francisco, 8.7% were found with a loss of 9 points or

more sensation units by the audiometer and 1.6% of the total number tested were considered sufficiently deafened to need training in lip reading.

In the Special Study of Vision of School Children by Kempf, Jarman and Collins (Public Health Report for July 6, 1928) 66% of the eyes which read 20/20 or better, read 20/50 or worse when a cycloplegic was used and nearly a fifth tested 20/100 or worse after the cycloplegic. This emphasizes the need for observation or children as to symptoms of eyestrain rather than the use of the Snellen card for testing. The investigators recommend that "any child with symptoms of eyestrain should be sent to an eye physician for examination even if he reads 20/20 on the Snellen chart."

Only 2% of the children of six and seven years were found to be myopic, but the percentage rose rapidly to 9% at 12 years. Such defectives can be found by use of the Snellen test.

A Statistical Section has been formed in the Health and Corrective Physical Education Department of the Los Angeles schools. "The aim of this division is to check up the work of every section of the department to see that each one is efficient and of benefit to the children of the Los Angeles City Schools and that it is working without any burden to the tax payers."

W. R. P. Emerson thinks, from his studies in colleges, that "the greater the student's theoretical knowledge of health, the poorer his practice." He believes that is because the teaching is purely theoretical and that "weighing and measuring at regular intervals, and at the same time giving personal instruction in proper health habits produces results that far exceed those obtained by the methods of health education now generally in practice." In a woman's college he estimated the "health intelligence quotient," or the proportion of health information which a pupil applies in her own living, as follows: Freshmen 77%, sophomores 75%, juniors 73%, and seniors 71%.

Of Smith College seniors 1928, 57% were considered in sound health, 40% were lacking in reserve or needed care, and 3% had poor health. After two years of required physical activity 30% did some regular vigorous exercise at set times; 49% took walks or played tennis or golf when they had a chance, 20% did nothing more than was necessary for getting about or shopping.

George R. Moon of the University of Chicago finds that, next to finances, ill health is the reason most frequently given by students for withdrawal from that institution.

Dr. R. N. Bradshaw, physician for Oberlin College, finds that the self-supporting students both men and women, had in 1926-27 a much higher percentage of illness than financially independent students.

According to the studies of Janet H. Clark of Johns Hopkins University, a child seated 15 feet from a north window transmitting ultraviolet rays would get no more effect from such radiation in 20 hours than he would in 20 minutes from direct sunlight in the open air at noon. The tests were made in March, April and May.

By action of the New York State Department of Education, dental hygienists engaged in public school work are now considered dental hygiene teachers. They must be certified as such in order that local boards of education may receive the State quota toward their salaries. This provision is the same as is required for all other teachers. Qualifications for certification as a dental hygiene teacher are: (1) "Registration as a dental hygienist in New York State; (2) high school graduation or its equivalent; (3) credentials showing completion of at least twelve semester hours' work in approved professional courses in health education."

The American Association of School Physicians, which was recently organized, held its first meeting in Chicago in October. The proceedings will be published. Dr. William A. Howe, Director of Medical Inspection for the State of New York, was the first president and is now the secretary of the Association.

In the schools of Kalamazoo, Mich., 20 minutes are allowed for the physical examination of each pupil and the parents were present in 100% of the examinations this year.

A method of group testing of vision of school children is being tried in the schools of Minneapolis.

There are now over 1,200 school physicians in New York State, 42 of whom are on full time.

Courses for teachers of the hard-of-hearing and of sight saving classes will be given at Teachers College, Columbia University, this year.

The Missouri Association for Occupational Therapy is sponsoring a training course for teachers of crippled children who are already in the field, or for those who are training to enter it. The course has been planned in co-öperation with the School of Medicine, the Departments of University Extension and of Education of Washington University, and the St. Louis School of Occupational Thearapy. The duration of the course will be one college year with four months cadeting in hospitals and schools for crippled children.

Studies in the effects of various types of ventilation will be made this year in four school buildings of New York City. The experiments will be conducted by the New York Commission on Ventilation.

A booklet on "The Pupils' Health, Suggestions and Advice to Parents of Preschool Children," is issued by the Department of Health Education of the Atlantic City Schools.

In a "Handbook of Suggestions in Health Education," the Board of Education of England has packed in small compass for the use of teachers the essentials of health practices and knowledge for school children of all ages. As compared with our own outlines there is more emphasis on the character and care of the clothing.

Dr. Letitia Fairfield, who recently visited Americ.. for the Child Guidance Council, reported to the London County Council that overwork was common among American children, but very rare among London children. Its prevalence here was the result of the importance attached to the term reports on conduct, effort and efficiency and the disgrace which occurred with lack of normal promotion.

Thirteen hundred "trained gymnasts" of England have petitioned the Senate of the University of London for the granting of a diploma in physical education.

According to a letter to the *Journal of the American Medical Association*, the National Association for the Diffusion of Culture of Italy has decided to transform all of its schools scattered throughout the country into open air schools, and the Minister of Public Instruction is considering the extension of the system to all Italian elementary and middle schools.

The city of Rio de Janeiro employs 23 part-time medical inspectors of schools and 46 nurses for 80,000 pupils.

The only cities in France having a complete organization for medical inspection are Paris and Lyons. Regular physical examinations are unknown except in a few departments of the State. A bill was recently introduced into the Chamber of Deputies providing for a reorganization of this work throughout the country.

Miss Brainerd of the Pan American Union reports from her visit to Brazil that health education receives much attention in that country. "Practically every school visited has its special room for regular medical and dental examinations, with a dental chair and necessary apparatus and a first-aid outfit. Pupils are required to bring their own towel and drinking cup. A nurse is employed in many schools."

"Whereas, the improvement of the health of children attending public schools should be one of the main objects of the school system," Porto Rico passed in May, 1928, a law establishing a division of school hygiene in its department of education with a "Physician-Director" at a salary of $4,000.

Although only 28.4% of the school population of Scotland is in Glasgow, 65% of the medical work done in the country is accomplished in that city.

The report of the Health Section of the World Federation of Education Associations, which met in Toronto last year, has been published by the American Child Health Association, in co-öperation with the Metropolitan Life Insurance Company. Seventeen countries contributed material for this report.

The American Child Health Association has published "The Story of May Day 1924-1928,'" giving an account of the origin of the day, the special activities carried on in each State and the results.

Plans for a complete series of health education films designed specifically for class-room use in public schools have been completed under an agreement by which the Department of Biology and Public Health of Massachusetts Institute of Technology will co-öperate with the Eastman Teaching Films, Inc., in what is said to be the most comprehensive program of its kind ever undertaken.

The films will be produced under the direction of Dr. C. E. Turner, Professor of Biology and Public Health.

The Metropolitan Life Insurance Company offers a statuette to any high school in a city with a population of 5,000 or more to be used as an award in interclass debates on the theme of contributions made by scientists in the promotion of human well-being and happiness as compared with leaders in other fields.

This company has also issued recently a report on Hand-washing Facilities in Schools (a survey of the condition found in 404 schools in 22 States) and a report of a study of What Some Communities Are Doing to Conserve the Health of the Teacher.—*United States Department of the Interior, Bureau of Education.*

RECENT DEATH

FELCH—Dr. George Alfred Felch, of Watertown and Boston, died at his home in Watertown, November 22, 1928, at the age of 58.

He was a native of Ayer, a graduate of Tufts College Medical School in 1913 and practised chiefly urology. He joined the State Medical Society the year of his graduation and was on the staff of the Boston Dispensary. He is survived by his widow, who was Miss Janey Little of Amesbury, and by two children.

NOTICE

FENWAY HOSPITAL

The impression has been given that the Fenway Hospital, Inc., 298 Newbury St., has a closed staff, but this is not so. The hospital will be glad to welcome all doctors in good standing.

Fenway Hospital, Inc.,
Margaret Rogers, R. N., *Supt.*

REPORTS AND NOTICES OF MEETINGS

BOSTON MEDICAL HISTORY CLUB

The second meeting of the Boston Medical History Club was held at the Boston Medical Library on November 19.

Dr. Arthur B. Lyon was the principal speaker and took for his subject the History of Diphtheria. He outlined the history of the disease from its earliest probable description in the Talmud to the latest modern developments in treatment and prevention. The earliest extant portrait of diphtheria is from the pen of Aretaeus, who gave an accurate description, leaving no more doubt what it depicted than if it had been written today.

There were a few scattered descriptions during the fourth to sixth centuries B. C. but it is remarkable to note that from the close of the sixth century until near the end of the sixteenth, there is not a word in all history that can be said with certainty to refer to diphtheria. The disease appeared again towards the close of the sixteenth century in Spain and from then to now there has been a constant record of its ravages.

In December 1659 at Roxbury, Massachusetts, three children of the Reverend Samuel Danforth were attacked by "The malady of bladders in the wind-pipe". In 1670 or 1671 John Josselyn, an English traveler who twice visited New England, made the following record: (The Colonists) "Our trouble with a disease of the mouth and throat which hath proved mortal to some in a very short time, quinsies and impostumation of the almonds", (tonsils). The identity of the disease thus quaintly characterised

by Danforth and by Josselyn has never been questioned.

Dr. Lyon commented fully on the American record of the eighteenth century closing his paper with a discussion of the modern discovery of the bacillus, the development of anti-toxin and the more recent Schick test.

The paper was discussed by Drs. M. J. Rosenau, E. C. Streeter, Conrad Wesselhoeft and W. H. Robey.

Mr. Alfred Ela gave an interesting five minute talk on means of conveyance used by doctors from the time of the old horse shay to the modern use of the airship.

James F. Ballard gave a short talk on English imprints demonstrating many of these rare and valuable books. He called attention to the recent gift of Dr. Bullard of over 180 sixteenth and 100 seventeenth century books. The Bullard collection contains important Spanish and English imprints as well as many valuable medical classics of this period. Among the books shown may be mentioned: "New-Englands Rarities Discovered", by John Josselyn, Gent., printed at London 1672; William Bullein's "Bulwarke of Defence", London 1562 and 1579; the "Castel of Helth", of Sir Thomas Elyot, London, 1541. Mr. Ballard also exhibited the extremely rare and fine copy of the "Judycyall of Uryns", printed at London by Treveris about 1527.

STAFF MEETING AT THE MASSACHUSETTS GENERAL HOSPITAL

A Staff Meeting of the Massachusetts General Hospital will be held in the Moseley Memorial Building on Thursday evening, December 13, at 8.15. The usual demonstration of cases will be followed by a paper by Dr. Arlie V. Bock on "Some Aspects of the Physiology of Muscular Exercise, including a study of Clarence DeMar, with Clinical Application."

Physicians, medical students and nurses are cordially invited to attend this meeting.

THE HARVARD MEDICAL SOCIETY

The Harvard Medical Society will hold its next meeting at the Peter Bent Brigham Hospital at 8:15 on the evening of December 11. The meeting will be a Bicentenary of the birth of John Hunter. The participants of the meeting will be: Dr. Harvey Cushing, Dean Leroy Miner, Dr. W. P. Coues, Dr. Arlie Bock, Prof. W. M. Wheeler, Dr. F. T. Lewis, and Dr. Henry Viets.

GREATER BOSTON MEDICAL SOCIETY

A meeting of the Greater Boston Medical Society at the Beth Israel Hospital will be held at the Auditorium of the Beth Israel Hospital, Tuesday, Dec. 11, 1928 at 8.15 p. m.

Program: "Properties of Protective Pneumococcus Antibodies," by Lloyd D. Felton, M.D. Discussion by: Milton J. Rosenau, M.D. Clinical Discussion by: Harry Linenthal, M.D., Beth Israel Hospital; Frederick T. Lord, M.D., Massachusetts General Hospital; William H. Robey, M.D., Boston City Hospital.

Recent developments from the laboratory and clinical standpoint in the serum treatment of pneumonia will be discussed and compared with statistics of the earlier serum treatment of this disease by physicians who have had an opportunity to observe large numbers of cases in several of the large hospitals in Boston.

Physicians and medical students are cordially invited.

A general discussion will follow the program.

ROBERT SLATER, M.D., *Secretary.*

THE NEW ENGLAND PEDIATRIC SOCIETY

The annual meeting of the New England Pediatric Society will be held at the Boston Medical Library on Friday, December 14, 1928, at 8:15 P. M.

I. Report of the Council.

II. The Treasurer's Report.

III. The following paper will be read: A Plea for Fewer "Emergency Operations" in Childhood, James S. Stone, M.D., Boston. To be read by Thomas H. Lanman, M.D., Boston. The paper will be discussed by C. B. Faunce, M.D., Boston; William E. Ladd, M.D., Boston.

IV. Election of Officers.

WILLIAM W. HOWELL, M.D., *President.*
RANDOLPH K. BYERS, M.D., *Secretary.*

BOSTON ORTHOPEDIC CLUB

The next meeting of the Boston Orthopedic Club will be held on Monday evening, December 10, at 8:15, in Sprague Hall of the Boston Medical Library.

PROGRAM

Tuberculosis of the Symphysis Pubis, Dr. Harold C. Bean.

Symptomatology of Varicose Veins and Their Relation to Orthopedic Surgery, Dr. John Homans.

MASSACHUSETTS PSYCHIATRIC SOCIETY

The next meeting of the Massachusetts Psychiatric Society will be held at the Boston Psychopathic Hospital, 74 Fenwood Road, Boston, Mass., Friday evening, December 14, 1928, at eight o'clock.

The program will consist of a presentation of the results of certain activities of the Department of Mental Diseases. The titles of the papers are:

"Newer Aspects of the Problem of Mental Deficiency" by Neil A. Dayton, M.D.

"Psychiatry and the Massachusetts Courts as Now Related" by Winfred Overholser, M.D.

WINFRED OVERHOLSER, *Secretary.*

NEW ENGLAND HEART ASSOCIATION

December 20, 1928
8.15 P. M.
Amphitheatre, Children's Hospital,
300 Longwood Avenue, Boston, Mass.

I. The Serum Treatment of Rheumatic Fever. Dr. Sidney D. Kramer, Boston.

II. The Allergic Conception of Rheumatic Fever. Dr. Clifford L. Derick, Boston.

Discussion to be opened by Dr. Kenneth D. Blackfan, Boston.

THE WINTER TRAINING COURSE FOR MEDICAL RESERVE OFFICERS

The Winter Training Course for Officers of the Medical Section, Organized Reserves, U. S. Army,

in Boston and vicinity, will be held on December 12, 1928, at 8.00 P. M., at the University Club, 40 Trinity Place, Boston, Mass.

The guest of the evening will be Dr. V. H. Kazanjian, formerly a Major, Royal Army Medical Corps, who will address the meeting on "War Wounds of the Face and Jaw". The address will be illustrated.

Officers attending the meeting will be given credit for participation in Military Activities.

SOCIETY MEETINGS

Combined Meetings of the Boston Medical Library, the Suffolk District Medical Society, the Middlesex South District Medical Society and the Norfolk District Medical Society

December 19—Surgical Section. Symposium on Stomach Surgery. "Operative Procedures: Indications and Results," Dr. R. H. Miller; "Selection and Management of Patients for Gastric Surgery," Dr. H. M. Clute; "Acute Perforations of Stomach and Duodenum," Dr. W. R. Morrison; "Results of a Series of Stomach Operations," Dr. E. S. Emery, Jr. Discussion by Doctors David Cheever, Edward P. Richardson, Frank H. Lahey and I. J. Walker.

January 30, 1929—General meeting in association with Boston Medical Library. "Heredity," Professor George H. Parker, Harvard University.

February 27, 1929—Medical Section. "The Newer Knowledge of Nutriment," Dr. Lafayette B. Mendel (exact title to be submitted later), Yale University Medical School.

March 27, 1929—Meeting in association with Middlesex South District Medical Society. Clinical and Experimental Studies of Obstructing Jaundice and Its Complications. Dr. Waltman Walters, Mayo Clinic.

April 24, 1929—Annual meeting. Speaker, Dr. Walton Martin, New York City. Title to be announced later.

The medical profession is cordially invited to attend all these meetings.

December 10—Boston Orthopedic Club. Detailed notice appears on page 1187.

December 11—The Harvard Medical Society. For complete notice see page 1187.

December 11—Greater Boston Medical Society. Complete notice appears on page 1187.

December 12—Winter Training Course for Medical Reserve Officers. Detailed notice appears on page 1187.

December 13—Staff meeting of the Massachusetts General Hospital. Detailed notice appears on page 1187.

December 14—The New England Pediatric Society. For complete notice see page 1187.

December 14—Massachusetts Psychiatric Society. Detailed notice appears on page 1187.

December 20—New England Heart Association. See page 1187 for detailed notice.

DISTRICT MEDICAL SOCIETIES

Barnstable District Medical Society

Schedule of Meetings: February 7, 1929, May 2, 1929.

Bristol North District Medical Society

April 18, 1929—Spring meeting.

Essex North District Medical Society

January 2, 1929 (Wednesday)—Semi-annual meeting at Haverhill, at 12:30 P. M.

May 1, 1929 (Wednesday)—Annual meeting at Lawrence, at 12:30 P. M.

May 2, 1929 (Thursday)—Censors meet at Hotel Bartlett, 95 Main Street, Haverhill, at 2 P. M. (Tel. 3430.)

Essex South District Medical Society

January 2, 1929 (Wednesday)—Hawthorne Hotel, Salem. Dinner at 7 P. M. Symposium on Gall Bladder Disease. Speakers: Dr. Chester Jones, Boston, Diagnosis of Gall Bladder Disease, and Differential Diagnosis in Jaundice. Dr. Paul Butler, Boston, X-ray in Gall Bladder Disease. Dr. Frank Lahey, Boston, Surgery of Gall Bladder.

February 6, 1929 (Wednesday)—Council meeting, Boston.

February 13, 1929 (Wednesday)—Danvers State Hospital. Clinic at 4 P. M. Supper at 6 P. M. Speaker: Dr. Roger Lee, Boston; subject to be announced later. Discussion from the floor.

March 6, 1929 (Wednesday)—Lynn Hospital. Clinic at 5 P. M. Dinner at 7 P. M. Symposium on Pneumonia. Speakers: Dr. Reginald Fitz, Diagnosis. Dr. Fred Lord, Treatment. Dr. William H. Robie, Heart in Pneumonia. Discussion from the floor.

RALPH E. STONE, M.D., Secretary.

Franklin District Medical Society

Meetings will be held on the second Tuesday of January, March and May.

Hampshire District Medical Society

December 12—Address by Dr. Philemon Truesdale.

March 13, 1929—Address by Dr. George E. Gage, Professor of Bacteriology and Physiology at the Massachusetts State College.

Middlesex East District Medical Society

The following schedule of meetings has been arranged for the coming year:

January 16—Wakefield.
March—Reading.
May—Melrose.

Subjects and speakers to be arranged by committees in each city or town.

Middlesex North Medical Society

The winter meeting will be held the last Wednesday in January.

The annual meeting will be held the last Wednesday in April.

Middlesex South District Medical Society

March 27, 1929—Joint meeting with the Suffolk and Norfolk Districts.

April, 1929—Annual meeting. Definite date to be announced later.

Norfolk District Medical Society

Below are the proposed meetings of the Norfolk District Medical Society for the 1928-29 Season. The schedule below will be adhered to as strictly as possible. The carrying out of the proposed plan will, of course, depend upon the acceptances of invitations extended to the speakers. Minor changes may be necessary.

January 29—Roxbury Masonic Temple. Subject, Treatment of Varicose Veins by the Injection Method—Dr. E. E. O'Neil. Dr. Homans will open the discussion.

February 25—Roxbury Masonic Temple. Dr. W. R. Ohler. Subject to be announced. Discussion to be opened by Dr. A. A. Hornor.

March 29 — Roxbury Masonic Temple. Subject and speakers to be announced.

May—Annual meeting program to be announced.

The Censors of the Society meet May 9, 1929, at the Roxbury Masonic Temple, Warren Street, Roxbury, at 4 P. M., for the examination of candidates.

Plymouth District Medical Society

January meeting, Thursday, January 17, 1929, at 11 A. M., Brockton Hospital, Brockton, Mass. Speakers: Dr. Michael F. Fallon, Chief of Surgical Staff, St. Vincent Hospital, Worcester, Mass.; Dr. Edw. J. Denning, Chief of Medical Staff, Carney Hospital, Boston, Mass.; subject to be announced later.

March meeting at the Moore Hospital, Brockton, Mass., March 21st, program to be announced later.

April meeting at the Commercial Club, Brockton, April 18th, at 6 P. M. Annual Oration by Dr. Ralph C. McLeod, Orator; dinner.

Suffolk District Medical Society

March 27, 1929—Meeting in association with Middlesex South District Medical Society. "Clinical and Experimental Studies of Obstructive Jaundice and Its Complications," Dr. Waltman Walters, Mayo Clinic.

April 24, 1929—Annual meeting. Speaker, Dr. Walton Martin, New York City. Title to be announced later.

LINCOLN DAVIS, M.D., President.
ARTHUR H. CROSBIE, M.D., Secretary.

Worcester District Medical Society

December 12, 1928—Chamber of Commerce, Worcester. Orthopedic Symposium.

January 9, 1929—Chamber of Commerce, Worcester. Dr. Leon T. LeWald of New York City.

February 13, 1929—Worcester State Hospital. Program to be announced.

March 13, 1929—Worcester City Hospital. Dedication of New Nurses' Home. Speaking program to be announced.

April 10, 1929—Grafton State Hospital. Program to be announced.

May 8, 1929—Annual meeting. Worcester Country Club.

Worcester North District Medical Society

January 22, 1929 (Tuesday)—At Henry Heywood Memorial Hospital, Gardner, by invitation. Program by Staff.

Annual meeting the fourth Tuesday in April.